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In view of an increase in our paper ration from the beginning of November, we are now prepared to accept a limited number of new home subscribers. The arrangements for accepting all new overseas subscriptions remain unchanged

## DIESEL RAILWAY TRACTION

The January issue of this RAILWAY GAZETTE Publication, illustrating and describing developments in Diesel Railway Traction, is now ready, price 2s.

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Price 25s.

## HISTORY OF THE BRITISH RAILWAYS DURING THE WAR 1939-45

by R. BELL, C.B.E.

with a foreword by Sir William Wood,  
President, London Midland & Scottish Railway

THE RAILWAY GAZETTE

33, TOTHILL STREET, WESTMINSTER, S.W.1

## The Next Home Railway Dividends

AS was briefly recorded in our last week's issue, it is expected that final dividends in respect of 1946 will be declared by the boards of the home railway companies in February next. The provisional dates are: L.M.S.R., February 7; Southern Railway, February 13; G.W.R., February 14; L.N.E.R., February 21. More than usual interest will attach to the decisions that the directors make on this occasion, in view of the Transport Bill now before Parliament. There is no likelihood that the Bill will have passed through both Houses by February, despite the efforts which the Government is making to rush through the measure, but it is possible that it will have done so before the end of July next, when, normally, the 1947 half-yearly dividends for the main-line companies would be considered. The clauses of the Bill dealing with dividend payments make it clear that the companies affected may not pay any dividends except those which were due and payable before the passing of the Act. After that date, any dividends due for the period up to the date of transfer, which is December 31, 1947, will be paid by the Transport Commission, and Clause 22 of the Bill lays down that in deciding how much to pay, the Commission shall take the years 1946 and 1947 together, and ensure that the dividends paid in these two years shall relate only to the net revenue earned in the same period. Presumably, therefore, if the boards were to decide to distribute funds drawn from reserves in February, the Commission would reduce the payment made in respect of 1947 by that amount. The point is of some importance, as last year, monies placed to contingencies accounts and not required were brought into net revenue and distributed by several of the companies.

## Mr. W. S. Edwards

The British locomotive manufacturing industry is the poorer by the loss of Mr. W. S. Edwards, whose death we recorded briefly in our last week's issue. Some biographical details and a portrait of Mr. Edwards are given elsewhere. For many years he had been associated with the well-known locomotive building company of W. G. Bagnall Limited, which he joined as Chief Draughtsman in 1902, and of which he had been Managing Director for nearly 15 years at the time of his death. His apprenticeship to the locomotive engineering industry had been served at the works of Kerr, Stuart & Co. Ltd., and he had received his training under the late Mr. Hartley, who, in his day, was a prominent North Staffordshire engineer. Mr. Edwards had taken a considerable part in engineering matters in Staffordshire, and had held office in several of the associations connected with the industry. Although his health had not been good for some time, he had maintained close contact with business affairs. The loss of his long experience of matters affecting the industry of which his company has been a valuable unit for three-quarters of a century, will be felt not only by the undertaking with which he was most intimately associated, but also in the counsels of the Locomotive Manufacturers' Association.

## Institute of Transport: Council's Annual Report

In the course of the Report of the Council of the Institute of Transport on the work of the Institute for the year ended September 30, 1946, it is stated that, as from October 1, 1945, a new organisation of the standing committees of the Council came into operation (eight committees were responsible for the detailed administration of affairs during 1945-46) and that it appears to have functioned satisfactorily; the Council records its appreciation of the work of the committees and their chairmen. The Council also thanks the officers and committees of the centres abroad, sections, sub-sections, groups, graduate and student societies, and the honorary corresponding members for their valued services during the year. The report states that the general financial position continues satisfactory, and that this is worthy of comment in view of the fact that during the war the subscriptions of graduates and students and of many associate members were halved, that subscriptions, even now, have not been raised above their pre-war level, and that costs have risen enormously. The satisfactory position has been possible only by straining the Institute's resources and by careful management. The Council

thanks the transport Press for the help received from it. Officers and members of Council again had the opportunity of meeting the editors or representatives of some twenty leading publications directly interested in transport, and exchanging views.

### Sierra Leone Government Railway

It is 48 years since the Sierra Leone Government Railway was constructed, and since that time it has had to be subsidised from Colony funds in order to balance its budget. For the last few years, the debit balance has shown a steady increase. In his report on the year 1945, the General Manager, Mr. W. H. Salkield, points out that operating costs are rising, and are paid from revenue account, but no improvements have been made in 48 years to allow greater loads or higher speeds to offset these costs. The system abounds with heavy curvature and gradients. On the main line there is an average of five curves a mile, and all bridges are capable of carrying a 5-ton axle load only. The gross revenue of the system for 1945 was £359,139, a decrease of £4,042, and gross expenditure increased by £145,747 to £559,644. Mr. Salkield gives it as his opinion that the people of the Colony and the Protectorate travel more when they have money to spare than do the inhabitants of most other countries. He hopes that before long it will be possible to recommend a reduction in the present third class fare of 1½d. a mile.

### London Peak-Hour Traffic

In connection with the Ministry of Transport proposals for staggering rush-hour traffic to and from London (reported in our November 29 and December 6, 1946, issues), 80 London Transport research workers have now completed the most detailed survey ever undertaken of these passenger movements. Counting all forms of public service, it is shown that 838,000 passengers leave the area bounded by Camden Town, Whitechapel, Lambeth, and Hammersmith every normal weekday evening between 4.30 and 7 p.m. The heaviest travelling quarter-hour of the day is from 5.30 to 5.45 p.m., when 131,000 passengers begin their journeys, and between 5.30 and 6 p.m. there is a total exodus of 242,000. This compares with 116,000 in the preceding half-hour. During the 5.30 to 6 p.m. peak, the distribution of passengers among the various services is as follows: Underground railways, 410,000; road services, 250,000; and main-line railways, 178,000. Incoming traffic reaches its peak between 8.45 and 9 a.m., with 114,000 travellers. In the next quarter-hour there is a drop to 103,500, followed by 90,000 arrivals between 9.15 and 9.30 a.m. The first of fourteen conferences to co-ordinate proposals for staggered business hours between the zones into which London has been divided was held in Westminster on January 7.

### Indian Ports Committee

One of the most important recommendations embodied in the recently-published report of the Indian Ports Technical Committee, presided over by Sir Godfrey Armstrong, is that there is need for a new major port on the west coast between Bombay and Karachi, and that Sika, in the Gulf of Cutch, is the most promising site for this port. The committee is of opinion that this scheme should be developed as soon as possible, and that effective and quick rail transport between the new port and Central and Upper India, without transshipment, should be provided by a broad-gauge railway from Sika to Viramgam on the B.B.C.I.R., or some other suitable station—presumably on the long-proposed Bombay-Sind Connection Railway now being resurveyed. The economic prosperity of the new port depends, the committee considers, on such a line of communication. Another recommendation is that the relative economics of sea and rail transport should be thoroughly investigated by the Government of India, and that the resultant policy proposed should be clearly defined. A unified policy for the working of the existing minor ports on the Kathiawar coast—to the south of Sika—and of the various railways in the Kathiawar States is considered essential, and should be secured by negotiation between the Government of India and

the Indian States in Kathiawar, who own these ports and railways severally, and are inclined to work them competitively, each with its own customs policy.

### Stopping High-Speed Trains

Some interesting tests have been carried out on the Chicago, Burlington & Quincy Railroad of the United States, with a view to ascertaining the minimum distance in which a train with diesel-electric power can be pulled up from a speed of 80 to 85 m.p.h. They result from a serious collision on April 25, in which the "Exposition Flyer" overtook and ran into the "Advance Flyer" when the latter had been stopped for examination, and was properly protected by automatic signals, one 934 ft. in rear showing a red "stop" indication, and the next, 5,617 ft. further back and visible all but a mile further still, showing a restrictive yellow indication. A train of nine all-steel cars, with 4,000 h.p. twin-unit locomotive, weighing in all 958 tons, and with a pressure of 110 lb. in the compressed-air brake-pipe, was pulled up in 7,368 ft. from 81 m.p.h., and in 7,913 ft. from 86 m.p.h., with a continuous brake application reducing the brake-pipe pressure by 12-13 lb. With a reduction of the pressure in two stages by a total of 30 lb., which became fully effective 26 sec. after the first application, a distance of 5,222 ft. sufficed to stop the train from 81 m.p.h., and 5,584 ft. from 86 m.p.h. Finally, with a full emergency application of the brakes, the 958-ton train was brought to a stand in no more than 3,529 ft. from the first brake application. This proved, however, that if the driver of the "Exposition Flyer" missed or neglected the restrictive warning, and delayed to make an emergency brake application until the stop indication first came into view 2,200 ft. away, a collision was inevitable.

### A Badly Maintained Bus

Colonel A. C. Trench's report on the serious accident at the Balmuckety public level crossing, L.M.S.R., on July 25, 1946, the principal details of which appear at page 56, shows that the cause was defective maintenance of a bus, the brakes on which failed as it was approaching the closed gates, of the position and condition of which the driver was aware. He could not stop the vehicle, and it ran through the near gates and came to rest on the line. The driver of the train saw what was happening and endeavoured unsuccessfully to pull up. The bus was struck, dragged along, crushed against a fence which prevented it from being thrown clear, and was completely wrecked. Seven passengers in it were killed, and three fatally injured; 14 others had to be taken to hospital. Only two escaped unhurt. The additional inquiry, made independently under the Road Traffic Act, 1930, revealed a far from satisfactory state of maintenance of the bus, and it is to be hoped that there are not many such vehicles operating on our highways. It was pronounced quite unfit to convey passengers by a Highways (Engineering) Inspector, but, apart from that, its condition might have led to an accident involving other vehicles.

### Gas Turbine Traction Recommended in Italy

In an article in *Ricerca Scientifica e Ricostruzione*, Signor F. Martinuzzi considers the possibilities of the gas turbine locomotive as an aid to the rapid restoration of railway communication in Italy. Pointing out that considerable time must elapse before certain sections formerly electrified can be restored to normal, and that steam locomotives, even were there no shortage, are not well suited to many of the routes on account of tunnels, he reviews the characteristics of the gas turbine engine. The conclusion he reaches is that this offers, from almost all points of view, the most practicable solution, being much less objectionable for tunnel work than the diesel-electric machines and using a cheaper type of fuel. The trials with the gas turbine locomotive built in Switzerland leave no doubt, he thinks, that some simplification of construction, such as the use of mechanical transmission and making the machine single-ended, would result in a cheaper design well adapted to the conditions likely to obtain for some years in Italy and offering a means of reviving services with a minimum of cost and trouble.

## Retrospect and Prospect

ALTHOUGH 1946 will be remembered for the celebration of Victory Day on June 8, it proved to be a somewhat disappointing twelve months from a railway point of view. The railway companies had hoped that they would be able to make appreciable progress during the year towards the restoration of the pre-war standards of their plant, equipment, and services, but difficulties in connection with the supply of labour and materials largely frustrated their efforts.

In the matter of train services, the commencement of the summer service on May 6 afforded an opportunity for making a modest start in the general acceleration of trains, and some further improvements were effected in the winter service which came into operation on October 7, despite the difficulties caused by the shortage and inferior quality of the locomotive coal supplied to them. Buffet and restaurant car services were recommenced; a limited, but gradually extending range of cheap fares was introduced on August 1; seat reservations were restored on a small number of trains on October 7; and some first class accommodation was restored on outer suburban trains. The restoration of more travelling post office coaches assisted in the general improvement in postal services.

Unfortunately, the effects of the shortage of coal on the national economy became more evident during the year, and in August the railway companies were directed by the Minister of Transport to convert 1,217 main-line locomotives from coal to oil burning, in order to save one million tons of coal annually. The coal position steadily became worse towards Christmas, and this fact, coupled with the inability of the railways, for the reasons already mentioned, to effect any appreciable reduction in the large number of engines under and awaiting repair, resulted in the railway companies being directed to reduce passenger train services as from December 9 to release engines for working coal and freight traffic. This caused the cancellation of a number of main-line trains and more extensive cuts have just been announced.

So far as rolling stock is concerned, despite every effort which could be made, the percentage of locomotives, carriages, and wagons under and awaiting repair continued abnormally high during the year, and very close inter-company collaboration was necessary to keep the traffic moving. Passenger and freight train traffic declined compared with 1945, largely because of the drop in Government traffic, but the shortage of rolling stock resulted in the imposition of traffic restrictions, mainly on the L.N.E.R. system, from time to time. During the year, various new types of passenger stock were turned out, and modernised sleeping cars and restaurant cars put into service. A number of cross-channel railway steamship services was restored, and orders given for the construction of new vessels to replace wartime losses. The "Golden Arrow" service from London to Dover was restored in April in connection with the Dover-Calais service.

On July 1, the Minister of Transport ordered passenger fares to be increased from 16½d to 33½d per cent. above the pre-war level, and workmen's fares, season ticket rates, and freight traffic charges from 10 to 25 per cent. above pre-war. At his request, the Charges Consultative Committee held lengthy public inquiries for the purpose of recommending to the Minister the level to which L.P.T.B. and the main-line companies charges should be increased, so as to enable the undertakings concerned to earn in 1947 sums approximating to those payable to them under the railway control agreement. The Committee made certain recommendations regarding the higher L.P.T.B. fares which, with one important exception, the Minister accepted, but, although he decided that the increased fares should be brought into operation as early as possible in January, no date has yet been announced. So far as the main-line companies charges are concerned, after a public hearing lasting 25 days, the Committee submitted certain recommendations to the Minister, but he has not yet published these or his decision thereon. No decision was reached by the Government during the year as to the payment of war damage contributions by public utility undertakings.

On what may be termed the political side, the railway companies and Roal Haulage Association submitted to the Minister of Transport a memorandum in July, making important proposals for the co-ordination of road and rail freight transport which were supported by all the important trading and transport organisations. This was followed by the issue of "British

Railways and the Future," outlining what the railway companies have done in recent years and are now doing for the continuous improvement of transport, and by the publication by the L.N.E.R. of "The State and the Railways," propounding a "landlord and tenant" scheme for overcoming the disparity between road and rail transport in the matter of track costs. Looming in the background throughout the year, however, was the threat of the nationalisation of transport, which culminated in the introduction of the Transport Bill.

As to the future, the L.N.E.R. and the Southern Railways have issued particulars of ambitious developments which they have in mind, and the G.W.R. and L.M.S.R. have also many development works which they desire to undertake. The limiting factor, however, is likely again to be the shortage of labour and essential materials, and, according to present indications, materials for maintaining the permanent way are likely to be in particularly short supply, a fact which may have important repercussions on the speed of trains.

## The Transport Bill

THERE are signs that the Government has been surprised by the keen criticism directed against the Transport Bill. The debate on the second reading last month failed to remove the objections to the policy of wholesale nationalisation. The speeches made by the Government spokesmen were not worthy of the occasion and failed to carry conviction. The nationalisers have not thought out the questions at issue in a thorough manner and are prone to snatch at any plausible argument which seems to favour their case.

An example of their shallow reasoning is afforded by a letter written to *The Times* on December 26 by Mr. Douglas Jay, M.P. for Battersea, North. We reproduce this letter on page 54, together with an effective answer from Mr. Gilbert Walker, Reader in Economics, University of Birmingham, which appeared in *The Times* of January 1, and two joint letters from Mr. H. T. Duffield, Chairman of the Road Haulage Association, and Sir Charles Newton, Chairman of the General Managers' Conference, in which Mr. Jay's points are dealt with in detail.

We may supplement Mr. Walker's remarks by stating that from 1923 to 1933 the larger proportion of railway freight receipts was earned on heavy merchandise, minerals, and coal. The average receipt from these traffics was slightly over a penny per ton-mile, or about half the receipt per ton-mile from high class merchandise. As the tonnage of rough traffics was four times the tonnage of high class merchandise, there can be no doubt that their conveyance was profitable to the railway companies—indeed, many lines and shipping places were designed primarily for dealing with materials in full wagon loads, such as iron and steel, ore, and coal.

We have also ascertained that the proposed Road & Rail Agreement in regard to rates did not contemplate an all-round increase in charges, as Mr. Jay suggests. The unrestricted issue of "C" licences, which was recommended by the negotiating parties, was a sufficient safeguard against any attempt to raise the level of charges unduly.

So far from strengthening the case for the Transport Bill, Mr. Jay's intervention supplies one more proof that there should have been a full inquiry into the problem before a measure involving revolutionary changes was introduced.

## Argentine Railway Operating Results, 1945-46

THE annual reports and accounts of all the British-owned Argentine railways for the financial year ended June 30, 1946, have been published, and have been followed by the customary general meetings of the proprietors. On the present occasion, the boards have changed the form of the accounts. The statement of revenue receipts and expenses is published in pesos, but, as heretofore, the net revenue account, capital account, and balance sheet are stated in sterling. The profits from the working of the lines, expressed in pesos, have been converted at ruling rates of exchange, and, in consequence, losses on exchange have disappeared. Hence, the par value of the Argentine peso has ceased to have any significance from the viewpoint of the stockholder, whose chief interest lies in the earnings of the properties in sterling. The net receipts of each company, in pounds, compare, as follow, with the figures

published in the preceding year at par rate of exchange, less exchange losses:—

	Net receipts 1945-46 £	Net receipts 1944-45 £	Inc. + Dec. — £
B.A. Great Southern ...	1,775,214	1,797,652	— 22,438
Central Argentine ...	1,515,668	1,275,089	+ 240,579
B.A. & Pacific ...	936,582	1,287,830	— 351,248
B.A. Western ...	370,156	558,998	— 188,842
Entre Rios ...	273,864	278,142	— 4,278
Argentine North Eastern ...	256,061	317,783	— 61,722
Totals ...	£5,127,545	£5,515,494	— £387,949

All the companies, with the exception of the Central Argentine, show falls in net receipts in sterling, varying from £351,248 on the B.A. & Pacific to £4,278 on the Entre Rios Railways. Notwithstanding impressive increases in the published weekly traffics, in pesos, the general fall in net earnings, in sterling, will not take stockholders by surprise, as press reports of labour demands which occurred at intervals during the year indicated that concessions to the railway workers would absorb much of the increased income. Taking all the lines together, it is evident that increased rates and fares proved insufficient to cover the cost of the improved conditions conceded to staff, though the experience of the different companies varied considerably.

Thus, the B.A. Great Southern reports a surplus of tariff increases over wage advances of \$1,410,000, which was paid into the common fund, after which the net receipts showed a fall of £22,438. The B.A. & Pacific was the heaviest contributor to the common fund, with \$3,014,000, but the net receipts of the line fell by as much as £351,248, or 27 per cent. In the Central Argentine accounts there is no mention of a surplus of tariff increases over wage advances, nor of collections from the common fund, and the company was able to record an increase in net receipts of £240,579, or 19 per cent.

The immediate interest of British stockholders lies in the terms under which the lines will be transferred to the new Argentine company, and in that connection the Chairmen indicated to stockholders at the general meetings the undesirability of discussion, at the present juncture, when three members of the boards are in Buenos Aires negotiating with representatives of the Argentine Government.

The agreement completed last September between the Argentine Government and the British Mission provides for a guaranteed minimum annual payment to stockholders in the British-owned railways of \$80,000,000, which compares with combined net earnings last year of \$86,951,251. The latter figure produced sterling to the amount of £5,127,545, which indicates an average exchange rate of \$16.82 to the £.

The net receipts, in pesos, during the year ended June 30, 1946, earned by the respective companies were as follows:—

	Net receipts 1945-46 \$
B.A. Great Southern ...	29,983,284
Central Argentine ...	24,510,379
B.A. & Pacific ...	17,684,196
B.A. Western ...	6,082,340
Entre Rios ...	4,478,182
Argentine North Eastern ...	4,212,870
Total ...	86,951,251

On completion of the transfer to the new Argentine company, British investors will become holders of peso shares. At the outset, dividends will be subject to the relationship of the guaranteed income to the amount of stock received in exchange for their properties. Any higher distributions will depend on the extent to which the lines are able to participate in the future economic development of Argentina. If the guaranteed income of \$80,000,000 (about £5,000,000) is capitalised on a 4 per cent. per annum basis, the peso shareholding to be distributed should amount to the equivalent of £125,000,000, whereas if capitalisation takes place at 3 per cent.—the approximate rate ruling at present for Argentine Government securities—the amount of peso shares allocated to British holders would have a value of about £166,000,000 at present exchange rates. The total issued share and debenture capital of all the companies is £249,000,000.

The final distribution of shares between the different companies must await the outcome of the negotiations now in progress in Buenos Aires, but, in the meantime, investors will have learned with satisfaction from the assurances given by

the chairmen at the recent annual meetings of proprietors that schemes will be constructed with due regard for the rights and interests of every class of stockholder and will be conditional on their approval.

## G.W.R. Track in 1946

**D**URING the past few months, the Great Western Railway has undertaken various interesting experiments in track work with the object of ascertaining how far its methods may be modified in the light of present-day conditions, now that permanent-way labour is so scarce and relatively more costly than ever before. In common with the other three British main-line railway companies, the G.W.R. has participated in the experiments concerned with the use in this country of flat-bottom rails, with the object of securing a track which is stiffer in both vertical and lateral plane than is provided by the use of the customary British bull-head rail. Until last year, however, only the two northern companies (L.M.S.R. and L.N.E.R.) had laid in flat-bottom rail and secured actual operating experience, although the results have been made available to the other companies. Last year, both the G.W.R. and the Southern Railway also laid substantial lengths.

In the case of the G.W.R., the first length of track so dealt with was in the up main line between Slough and Langley, Bucks. Similar relaying was effected at Dorrington, Pangbourne, and Wootton Bassett, and last June it was announced that, before the end of the year, it was expected that further lengths would have brought the total relaid with flat-bottom rails up to 38 miles. Only two miles of this used the 110-lb. B.S. section, which was adopted on the L.N.E.R., and the remaining 36 miles are using the new 113-lb. rail section developed by the four main-line railways and London Transport in consultation with the Rail Makers' Association. So far, experience has shown that the different shape and the additional weight make the 113-lb. F.B. rail at the lowest estimate 60 per cent. stronger than the 95-lb. B.H. rail that has been standard in this country for the past 25 years.

The design of the new rail has also enabled the strength of the rail joint to be increased very considerably. So far, no point-and-crossing work has been inserted on the G.W.R. in the new 113-lb. rail, but that company has participated in the Design Committee for Switches & Crossings in F.B. Rail, responsible for the first two turnouts with the new 113-lb. section laid in the L.M.S.R. track at Kegworth in August.

The G.W.R. has also introduced the pre-assembled method of relaying plain line. This has already been adopted for selected work on the London, Newport, and Wolverhampton Divisions, and its use will be extended during 1947.

The following description relates to the relaying of a quarter-mile length of track with 113-lb. flat-bottom rails over Maidenhead Bridge, between Taplow and Maidenhead. The site selected for assembling the new track was the siding on the down side of the line near Taplow Station.

Twenty-five 60-ft. lengths of track were assembled in five stacks, each of five lengths, and these were transferred to five engineers' 40-ton rail wagons in pre-planned order of loading, with the aid of a 10-ton steam crane. At the site, a 15-ton crane on the adjoining up main line lifted out one complete rail length of the old track and loaded it on an empty wagon; this crane then picked up one of the new rail lengths and lowered it into the gap, after preparation of the ballast. The net working time for relaying the 25 lengths was only 3 hr. 25 min., and 37 men were employed on the operation, including the crane driver and the groundsmen. Moreover, only one occupation of the line was necessary, instead of the usual four or five occupations.

With its flat-bottom rails, the G.W.R. is using the elastic spike for the dual purpose of securing the rail to the baseplate and the latter to the sleeper. In many instances it is not possible to adopt the crane method of relaying, and, therefore, large numbers of elastic spikes have to be driven on the day of the relaying. Here, the G.W.R. has found that the work can be eased considerably by using pneumatic riveting hammers driven by a mobile air compressor mounted on a permanent way wagon. A special head for the hammer has been designed to fit the top of the elastic spike. Every sleeper requires

six elastic spikes, three for each baseplate, of which two are in the four-foot and one on the outside. The present G.W.R. practice is to drive the four inner spikes by pneumatic hammer; and the two outer spikes by hand.

### Railway Developments of 1847

ALTHOUGH 1846 was "railway mania" year, the boom extended into 1847, and it was in that year that Charles Austin, whose success at the Parliamentary Bar was never surpassed, was said to have made a sum estimated at as high as £100,000 by his advocacy of railway interests. Towards the end of the year, the value of railway property slumped rapidly, and the famous "Railway King," George Hudson, found his anxieties growing daily more acute.

Meanwhile, in the General Election of August, 1847, Hudson retained his seat at Sunderland. Two famous Chairmen of the G.W.R. were also elected—the Earl of Shelburne (later the fourth Marquis of Lansdowne) for Calne, and Spencer Walpole (later Home Secretary) for Midhurst; the Hon. Edward Pleydell-Bouverie, a Director of that company, was returned for Kilmarnock.

John Sadleir, who had been Parliamentary Agent for Irish railways, was elected for Carlisle, but the real "railway election" was at Norwich, where (Sir) Samuel Morton Peto, one of the most famous of railway contractors, was at the head of the poll, and John Parry, serjeant-at-law (who had made his name—and fortune—in compensation cases for the L.B.S.C.R.) was at the bottom.

Sir John Easthope, Chairman of the L.S.W.R., was also rejected (at Bridgnorth); and, because of ill health, James Morrison (who in the previous year had obtained the appointment of a select committee "for the better promoting and securing of the interests of the public in railway acts") did not defend his Inverness seat. Joseph Locke, who began designing and constructing railways in Spain that year, was returned unopposed for Honiton.

Perhaps the most interesting railway personality among the M.P.s. of 1847 was Robert Stephenson, who was elected for Whitby, and was in that same year overcoming apparently insuperable obstacles in the building of the Britannia Tubular Bridge over the Menai Strait, and also the Conway Bridge. George Stephenson founded the Institution of Mechanical Engineers, and became its President—and joined a distinguished party at Drayton Manor to assist in the formal opening of the Trent Valley Railway on June 26.

The year 1847 was clouded by the Irish famine, and Lord George Bentinck, leader of the Protectionist Party, introduced a scheme to alleviate distress in that country by stimulating railway construction, which he proposed to effect by a Government loan of £200 for every £100 expended by the companies—Hudson, despite the difficulties that were gathering round him, pledged his credit that the Government would not lose a shilling by the transaction. But the Bill was opposed both by Liberals and "Peelites," and rejected by 322 votes to 118.

Besides the Irish famine, there was a financial crisis in 1847, and in a letter from the Premier to the Queen, dated October 14, occurs the illuminating phrase:—

"No forcible interference with railways would be justifiable, but a voluntary postponement of the execution of their Acts might be proposed to Parliament."

Another letter to the Queen that year was dated October 30, and came from her *bête noire*, Palmerston (who was then Foreign Secretary). It is of particular interest because it is an early instance of a man travelling by rail missing his appointment—although it will be noted that "Pam" did not blame the railways, but his own absent-mindedness:—

"Viscount Palmerston presents his humble duty to your Majesty, and has many apologies to make for not having attended your Majesty's Council today, and the more so as his absence arose from an inadvertence which he is almost ashamed to mention. But having got on horseback to ride to the station, with his thoughts occupied with some matters which he was thinking of, he rode mechanically and in a fit of absence to the Nine Elms Station, and did not recollect his mistake till he had got there; and although he made the best of his way afterwards to the Paddington Station, he could not get there in time for any train that would have taken him early enough to Windsor."

It was in 1847 that Trevithick's famous and long-lived locomotive, *Cornwall*, was designed for the L.N.W.R. William

Bridges Adams invented the fish-joint for rails that year—the greatest of his many rail inventions. Laurence Potts four years previously had obtained a patent for his method of sinking foundations, and in December that year, a technical journal described the first major contract in which it was used—the viaduct carrying the Chester & Holyhead Railway across Maeldreath Bay in Anglesey.

Thomas Brassey was appointed in 1847 contractor for the Great Northern, employing between five and six thousand men; (Sir) Robert Laffan, a famous colonial governor, was nominated an inspector of railways under the Board of Trade; that famous builder of bridges and station roofs, Rowland Mason Ordish, obtained an appointment in London, and began making surveys for a railway in Denmark; (Sir) William Tite began construction of the Citadel Station at Carlisle, and also stations on the Caledonian and Scottish Central Railways (including Edinburgh); (Sir) Douglas Galton was appointed Secretary to the newly-formed Railway Commission; (Sir) Henry James and Eaton Hodgkinson were appointed members of a Royal Commission to inquire into the application of iron to railway structures; and (Sir) George Findlay, then only eighteen, obtained employment in London in connection with the building of the new engine sheds of the L.N.W.R. at Camden Town—the line of which he eventually became General Manager.

On March 7, 1847, William Astell died; he was a Director of the East India Company for nearly half a century, and also Chairman of the Great Northern. He survived by three days that eminent engineer, Francis Giles, who was concerned in some of the largest works on the Newcastle & Carlisle Railway, and part of the South-Western, and was also responsible for the Great Warwick bridge in Cumberland, and for the cutting through the Cowran Hills, becoming afterwards a railway locomotive engineer. It was Giles, however, who, as the expert witness for the opponents of the Liverpool & Manchester Railway, said categorically that "no engineer in his senses would go through Chat Moss if he wanted to make a railroad from Liverpool to Manchester." It would appear that his strictures caused a state of "despondency and alarm," for it was rumoured during construction of the line that hundreds of men had sunk in the Moss, and that "railways were at an end for ever."

Among the celebrities born in 1847 were several who will be a personal memory, and a number of these were born in the month of February. The third Earl Cawdor (February 13) was Chairman of the G.W.R. from 1895 until his appointment as First Lord of the Admiralty in 1905, and it was during his *régime* that the ten-minute stop at Swindon was abolished, several new lines were laid, and the gross annual receipts rose from just over £9,000,000 to £12,000,000.

Thomas Alva Edison (February 1), that most versatile of inventors, began life as a railroad newsboy, and produced the *Grand Trunk Herald* (which was the first newspaper printed and sold on a train), also improvising a laboratory in a baggage-car, for chemical experiments. Another notability born in February, 1847, was Sir Robert McAlpine, who, like Edison, began work on a railway at the age of twelve, and subsequently built sections of the Glasgow Central Underground Railway, the Lanarkshire & Ayrshire Railway, and, in fact, railways all over the world.

On March 17 occurs the centenary of the birth of Sir Alexander Blackie William Kennedy, who was closely connected with the development of electric transport; he was joint engineer for the Waterloo & City Railway, and responsible for electrification schemes for the G.W.R., L.N.W.R., L.S.W.R., and South Eastern & Chatham, and became (1920) Chairman of the Ministry of Transport's committee on electric railways.

Besides Earl Cawdor, three other peers who were associated with railways were born in 1847—all in the month of August. The first Marquis of Aberdeen (August 3) was Governor-General of Canada, and became, in 1875, Chairman of a Royal Commission to inquire into railway accidents. Amelius Lockwood, first Lord Lambourne (August 17), was "Uncle Mark" in the House of Commons, and became a Director of the L.N.W.R. and a member of the Council of the Railway Association. John Forrest (August 22) was the first Australian to receive a peerage (as Lord Forrest) and in his capacity as Premier of Western Australia devoted himself to joining that State by railway with the rest of the Continent.

## LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

### Blaming Our Trains

42, Holland Park, London, W.11. January 1  
TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I enclose a cutting from *The Daily Telegraph* of December 31, 1946, which, I venture to think, deserves the fullest measure of publicity:—

To the Editor of "The Daily Telegraph":—

SIR,—Mr. Dalton's slashing attack on the British railways was completely untrue to the facts. Either he has never travelled abroad, or he has only used trains-de-luxe. Are any of these better than the "Coronation Scot?"

In addition to the British Isles, I have travelled fairly extensively in 15 countries of Europe. I have no hesitation in saying that British railways are far and away the best in comfort, safety, speed, service, and punctuality. There is not another country in Europe that can offer third class comfort to the ordinary passenger on the British scale.

On the Continent, third class travel means hard wooden benches. To travel in exceptional comfort one has to call in private enterprise. The best sleepers are provided by the International Wagons-Lits and Mitropa Companies, both private concerns. The fastest express in Norway is run by the Michelin Company. The "Edelweiss Express" is a Pullman train.

Has the N.U.R. nothing to say in reply to Mr. Dalton? An attack on the railways is an attack on those who run them, and that means the railwaymen. The Chancellor, in his desire to play to the gallery, has overreached himself this time, by slandering a body of men who for patience, courtesy, and efficiency have no equals.

Yours faithfully,

(Rev.) George F. Naylor.

Apart from the bald statement that "nationalisation will result in greater efficiency," the general public still awaits definite information as to how this is to be effected.

Mr. Morrison's statement that "nationalisation must prove their case," appears not to need implementing if it does not suit the nationaliser's book!

Yours faithfully,

EDWARD B. MALET

### Fifty Years of Rail Transport

"Westleigh," 8, Belper Road,  
Derby. December 28

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I read with some interest the paragraph on the training of future railway staff contained in the extracts from the address by Mr. H. J. Peacock ("Fifty Years in Rail Transport") in your issue of December 20. As a "would be" traffic apprentice, I should like, if you will permit me, to comment on his remarks.

I am an undergraduate in law at a provincial university, and have always been keen to enter the railway traffic staff. I can't agree with Mr. Peacock that the intelligent lad of 16, leaving school, is the best future administrator. In the present enlightened era of education for all, and more so in the future, the intelligent lad of 16 will not leave school, but will remain to reap the benefits of the university. It follows, therefore, that the supply of smart lads leaving school will be small.

A university man will be more inclined to grip with enthusiasm his chosen career, whereas it is more than likely that the lad of 16 will have had his faculties dulled by monotonous routine, and his incentive sapped by unambitious colleagues. If a university man has set his heart on a traffic apprenticeship, it is more than likely that he will, at least, have read copiously on his chosen career; not that I am suggesting that this will compensate for a lack of several years' practical work. Mr. Peacock cannot expect a young man to give up a university training in exchange for a clerkship with the nebulous possibility of promotion to higher grades.

The suggestion that a university course should be evolved for the special needs of those entering the railway service would certainly be welcomed by trainees. At the present, the policy of the companies does not seem to encourage graduates; hence the tendency for young men to enter the Civil Service. I am told that I must wait until I have taken my final examination before the companies will consider taking me, even if they condescend to do so, for none of the main-line railways anticipates any vacancies for some time. One company will not consider me as I am short-sighted, another will do so; in fact, the outlook is not cheering. Is it surprising that many

university men seek situations where at least their position will be clarified before the close of their college career? Furthermore, the impression has been spread that only the sons and nephews of directors and high-ranking railway officials will receive consideration.

Finally, might I suggest that the authorities controlling our railways in the future, make their selection of traffic apprentices in the first or second year of the candidate's university course, conditional on good progress with studies?

Yours faithfully,

R. C. SINCLAIR

London. December 30, 1946

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Having read with much interest the article by Mr. H. J. Peacock, O.B.E., in your issue of December 20, and your editorial article entitled "Early Training of Railway Officers," may I be permitted to add my own impressions? While there is much to be said for the views expressed regarding the qualities of the University-trained man as opposed to those of the man "reared" in the railway, my immediate thoughts are concerned with the latter.

He would be bold who would assert that all who are trained in the industry are of equal merit and/or promise. It seems, therefore, to me that the companies would profit by greatly increased efficiency if the heads of departments relied less on the "seniority" of their staff in the graded positions when they are considering the filling of vacancies; and recognised the merit of those whose only "sin" is youth, by affording them the opportunity of filling the more responsible positions, instead of advancing the man who happens to have been longest in the grade or is a year older than one otherwise more fitted for promotion.

What encouragement is there for the keen and enthusiastic young man who knows beforehand that he will not be considered for the vacancy in the next grade because only his "seniority" is inferior to his neighbour? This irritating mode of awarding promotion is certainly noticeable.

Yours faithfully,

"A. CLERK"

[Seniority is only one of the factors taken into account when promotions are being considered, and the trade unions attach great importance to the relevance of this point. Suitability for the position is, of course, of more importance than seniority.—ED., R.G.]

### Mr. A. L. Castleman

Roxburgh House, 273-287, Regent Street,  
London, W.1. December 31

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—It has been my very great pleasure to know Mr. A. L. Castleman during the whole time we have worked jointly on the Metropolitan Road-Rail Conference, and for most of that period he has been joint chairman with me. May I be permitted to pay my inadequate tribute publicly to him for the work he has done, and to say it would be difficult to measure the great good which his patience, tact, and charm of manner have accomplished?

At the beginning, suspicion and a common unwillingness to help a competitor made co-operation on the committee impossible, and even reasonable work fell behind; but before long Mr. Castleman, in his indefatigable way, went round the stumbling blocks, dealt successfully with those problems not too difficult, and had everyone soon determined that nothing would stop a successful conclusion.

It is a pity we are to lose so great an advocate of fair play for all, and the Metropolitan Road-Rail Conference will be all the poorer by one so hard to replace. I wish him every possible happiness in his retirement, and hope his experience will still be available to those, like me, who have so greatly benefited from contacts with him.

Yours, etc.,

J. F. E. PYE,

Chairman,

Road Panel of the Metropolitan Regional Committee

BRIDGE RECONSTRUCTION ON L.M.S.R.—The L.M.S.R. announces that contracts have been placed for the reconstruction of three bridges on the company's Lancashire Union Line. One contract, let to William Tarr & Co. Ltd., Warrington, covers the reconstruction of two bridges near Gerrards Bridge Junction, between St. Helens and Garswood, carrying the railway over a private pathway and over Merton Bank Road, respectively. Reconstruction of the third bridge, carrying the railway over Wigan Road between Amberswood Junction and Red Rock, on the Wigan—Chorley section, will be carried out by Thos. Wrigley Limited, Manchester.

## The Scrap Heap

THE MEANING OF N.C.B.

National Coal Board—the Government.  
Never Come Back—"The Daily Herald."  
No Coal Board—consumers.

### THE TRANSPORT BILL—AN EXCEPTION?

From the time that you're born  
Til you ride in a hearse  
There's nothing so bad  
But it might have been worse.

### GUIDE TO ECONOMICS

When someone stops buying—someone stops selling. When someone stops selling—someone stops making. When someone stops making—someone stops working. When someone stops working—someone stops earning. When someone stops earning—someone stops buying.

### 100 YEARS AGO

From THE RAILWAY TIMES, January 9, 1847

**TAFF VALE RAILWAY.**—The Directors are prepared to receive Tenders for Loans on Mortgage for terms of Three, Five, or Seven Years, in sums of not less than £200.  
Interest at the rate of 4½ per cent. per annum, payable half-yearly, viz., March 1st and September 1st.

By order of the Board,  
E. KENWAY, Secretary.  
Cardiff, October 21, 1846.

**MIDLAND RAILWAY.**—The Directors of the Midland Railway are prepared to receive Tenders for the supply of 2,000 Coal Waggon, with Wooden Hooves.

Plan, Specification, and Pattern Waggon may be seen on application at the Office of the Superintendent of the Locomotive and Carriage Departments, Derby Station.  
Tenders to be delivered to the Secretary, at the Station, Derby, before Ten o'clock in the morning of Tuesday, the 19th of January instant, and marked on the covers, "Tenders for Coal Waggon."

By order,  
J. F. BELL, Secretary.  
Derby, January 4, 1847.

### The Railway King of 1847



An old cartoon of George Hudson, the railway king, dated 1847 (See editorial article on page 37)  
[Reproduced from "The Man in the Moon"]

### THE PORT VICTORIA

The Government will soon acquire its first public house in the South of England, the Port Victoria Hotel, belonging to the Southern Railway, on the Isle of Grain, Kent.

When it was built 64 years ago the hotel was the terminus of the Port Victoria-Flushing shipping route. It was busy then. Trains ran out along the old pier right to the ships.

Queen Victoria used to go there, the Royal Corinthian Yacht Club was near, and the Kaiser's yacht used to stand off-shore. Times have changed, but the hotel still draws crowds of sailors in the evenings.—From the "Evening Standard."

### "NATIONALISATION OF MINES WILL HELP THE COUNTRY"

Sir Francis Joseph, Chairman of Settle Speakman & Co. Ltd., owner of a group of collieries in North Staffordshire, in a New Year message to employees says: "On New Year's Day the collieries of Great Britain become the property of the nation. Will the change help the country? The answer is: 'Yes, but it can only do so with your help.' The urgent need both for the homes and industries of Britain is more fuel.

"I ask you to serve the State to the utmost of your power. The nation has enabled you to realise your ideal of nationalisation. Let your New Year motto be: 'We will justify the trust of the public, and the miners of Britain will not fail them.'—From "The Evening Standard."

Writing in cynical vein, a correspondent suggests that the Vesting Day celebrations ordered by the National Coal Board for January 1, 1947, would pale into insignificance beside the saturnalian orgy with which we shall be commanded to welcome the nationalisation of the railways.

The signal, he says, for the opening of the revels will be the firing of Stephenson's "Rocket" by the Minister of Transport, who will afterwards ride in state into all the principal cities of the realm astride a decorated and illuminated locomotive. Joy, being compulsory, will of course be unconfined, and there will be scenes of riotous merry-making at every railway station. Tins of Spam will be roasted whole in the booking halls, and there will be banquets in the refreshment rooms at which excellent railway fare will be served, dancing on the arrival and departure platforms, and skittles for the children on the permanent way. Regardless of traffic movements, signals will be dipped in salute, and appropriate music will be broadcast over station loud-speakers. All the tunnels will be floodlit, and current issues of timetables, rendered obsolete by the new régime, will be publicly burned, to the accompaniment of cheers, groans, and hisses.

And when it is all over, the 9.25 down will still run 35 minutes behind time.—From "The Yorkshire Post."

### Comments on Transport Bill

#### PASSING THE BUCK

A reader writes: The Transport Bill appears to be drawn up on the best Civil Service ideas, where no one takes responsibility, and the buck will be passed on to the Minister, who will not like having to make unpopular decisions.

#### THE TEST

We shall know presently whether one railway can serve the country more effectively than four; whether industry can be supplied with power more regularly and economically by a country-wide commission; whether road transport is improved in convenience and cost when individual enterprise is limited. But the answers to these questions are of immense significance for the future of our economy, and they would be awaited with more equanimity if one could feel that the impending experiments upon its foundations had been conceived inductively from a painstaking study of the structure those foundations must support—rather than deduced from a body of theoretical dogma.—Sir Eric Macfadyen, in a letter in "The Times."

#### PROOF WANTING

No proof has been adduced either by Mr. Barnes or any other Government spokesman that the ostensible purposes of the measure could not as well, if not indeed far better, have been achieved without change of ownership with its inevitable impact on the lives of hundreds of thousands of citizens. Nor did Mr. Dalton improve his argument by slinging mud at the railways. To say that they are "a disgrace to the country" is not merely preposterous, but it is peculiarly ungracious in view of the splendid services they rendered during the war on the admission of Ministers themselves, including Mr. Barnes.

Those services could not have been rendered but for the excellent condition of the physical assets which Mr. Dalton now condemns as a "poor bag." If there are dilapidations, that is the fault, not of the railways, but of the war, which compelled the suspension of normal maintenance and renewals.—From "The Daily Telegraph."

#### A FIDDLING ARGUMENT

I think the most fiddling argument I have ever heard advanced by an Englishman in favour of his country pursuing a certain course of action is the fact that rather less than half the world pursues it already. Mr. Barnes, who seems to be the Minister of Transport, played this (to me) astonishing card when he told the House of Commons last week that 45 per cent. of the transport in the world is State owned. If the figure had been 90 per cent. I would still think that the argument was irrelevant and unworthy.

If foreigners do things well, there is some point in holding them up as an example; but the fact that they do things in a certain way is neither here nor there: 90 per cent. of the world (at a guess) gets along without a Monarchy, 70 per cent. of it has no use for Christianity, more than half of it blows its nose on its fingers, and a very high proportion of it sleeps on the ground. These and similar statistics are not without interest, but I cannot discover in them the criteria of British domestic policy.—"Strix" in "The Spectator."

## OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

### NEW SOUTH WALES

#### Moving Cattle from Drought Areas

During the winter months of June, July, and August, 1946, the severest drought for many years was experienced in New South Wales. The areas particularly affected were in the north and north-west. As a consequence, the Department of Railways was required to effect a large movement of livestock from the drought-stricken districts to the southern parts of the State.

The vast exodus of animals was well under way in June. In July, 10,000 cattle and 150,000 sheep were transported by rail under starving stock conditions over very long distances. During August, the effects of the drought were felt with still greater severity, and additional efforts had to be made to relieve the position. Of the 75,000 cattle and 1,000,000 sheep conveyed by rail during that month, 15,000 cattle and 250,000 sheep were starving stock. In August and during the first half of September, over 1,200 open goods wagons were used to augment the stock wagon supply to move starving stock to places where feed was available. In this way, nearly 5,000 cattle and 60,000 sheep were moved from the drought-stricken districts. [See illustration on p. 50.—Ed., R.G.]

#### Special Rates for Starving Stock

Starving stock conditions provide for a reduction of 25 per cent. of the freight charge on the forward journey and allow the livestock to return to their original pastures at a later date without any freight charges being imposed. This results in very low charges over the total mileage. For example, a typical journey during the recent drought was from Waggett to Wagga Wagga, a distance of 656 miles. Over that distance, a sheep van containing 100 starving sheep is hauled for £13 12s. 2d. on the forward journey. When the free return trip is taken into account, this means that the department receives only 2s. 8½d. in revenue for hauling a sheep a distance of 1,312 miles.

While starving stock were being conveyed from the drought-stricken areas, trains were hauling hay, chaff, and other stock feed to those areas. Actually, for a period, over 1,000 wagon loads of fodder a week were sent from the south to relieve conditions in the north and north-west. During July and August alone, the department carried 54,000 tons of fodder over long distances to the drought-affected areas.

### VICTORIA

#### Underground Railway for Melbourne

Plans have been announced for the construction of a tube railway system to serve Melbourne. Suburban traffic at present passes between the northern and southern systems by lines that skirt the city on the south and west. The underground line will begin outside the city, and will provide additional inlets to the business sections. In construction of the railway, it is proposed to use the "cut and cover" method in preference to tunnelling. The lines will connect with the suburban systems, and will by-pass the existing city terminals. Plans provide for construction

of three double tracks leading from the southern system to an underground interchange station on the north side of the Melbourne Cricket Ground. There they will merge into two double tracks, one to join up with the railway system to the north of the city, and the other to terminate on the northern fringes of the city. Although there will be no immediate work on the project, provision will be made for it when constructing new lines and a new station at the point where the underground railway will branch from the southern rail system.

### CANADA

#### The C.N.R. in 1946

In his review of 1946, Mr. R. C. Vaughan, Chairman and President of the Canadian National Railways, said that in common with all other railways, the Canadian National suffered a serious decline in net revenues. Operating costs were affected by higher wage rates and higher unit prices for materials, these costs representing an increase at the rate of \$30,890,000 per annum over 1945. Revenue tons of freight moved in 1946 were estimated at 79,975,000, as compared with 79,941,000 in the previous year. Notwithstanding this slight increase in tonnage, the gross freight revenues declined by \$16,500,000, due to a substantial drop in the average haul and in the class of commodities transported.

A total of some 22,081,000 revenue passengers were carried during the year, a decrease of 27 per cent. from the 1945 total of 30,370,680. Operating revenues of the system had been estimated at \$399,100,000, a decrease of \$34,673,000, or 8 per cent., from the previous year.

#### Rates Increase Urgently Required

These results emphasised the urgent necessity for an upward revision in rates on all freight traffic carried in Canada. On behalf of its member companies, the Railway Association of Canada had made formal application to the Board of Transport Commissioners for authority to make a general advance in freight rates, the present level having been established by the board in 1922. In the United States, the Interstate Commerce Commission had authorised a general increase in railroad freight rates equivalent to nearly 20 per cent.

New equipment received during the year consisted of 856 box wagons and 16 diesel-electric shunters. Approval had been given recently for the purchase of 3,000 units of various types of freight wagon equipment. The company had in hand a programme for modernising its passenger equipment. This included the purchase of 70 carriages, and the recon-

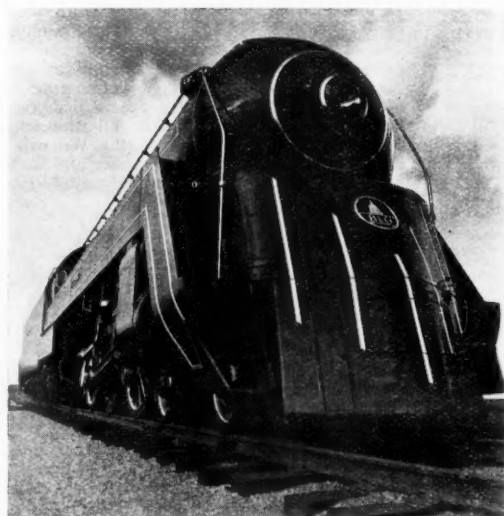
struction, in the company's shops, of 37 additional units.

#### New Projects

Approval had been given recently to proceed with the construction of an office building and an hotel in the new Central Terminal area of Montreal. These new premises were being planned to accord with the general design for the development of the whole area. The new line from Eastern Junction to Bout de L'Île, on the Island of Montreal, was proving its value. During 1947, construction would proceed on a new branch line to provide initial rail access to extensive stands of lumber and pulpwood in the Abitibi section of Quebec, and to open the country to colonisation.

The Canadian National express, telegraph, and hotel services had continued to maintain their high standards, and had been well patronised. In spite of its less satisfactory financial result, the year was one of development for the C.N.R. system

#### To Haul the "Cincinnatian"



One of the four new Pacific locomotives for the Baltimore & Ohio "Cincinnatian" express

in all its ramifications, not forgetting such branches as the colonisation and industrial development departments which, while not in themselves providing transport facilities, were valuable to the railway and were playing an important part in the strengthening of Canada.

### UNITED STATES

#### First B. & O. Post-War Streamliner

The latest of the Baltimore & Ohio fleet of passenger streamline trains, the first newly-built post-war train to serve the United States capital, will begin fast daily service on January 19. It will serve Baltimore, Washington, and other important cities en route to Cincinnati. This train, called the "Cincinnatian," will provide a daylight service at normal coach fare through the beautiful Potomac River valley and over the Alleghenies. All seats will be reservable. The new train has made an exhibition tour along its route before going into regular operation. Four new Pacific type streamline locomotives

have been built for this service. Developing a tractive effort of 50,000 lb., they will haul the train through the Allegheny mountain country without banker assistance.

#### New Diesel Service for Illinois

On October 6, 1946, the Chicago & Eastern Illinois introduced a new four-car streamline diesel train between Chicago and Cypress. The composition of the train consists of one combined mail, luggage, and grill-room car, and three coaches. The train is hauled by a 2,000-h.p. diesel-electric passenger locomotive built by the Electro-Motive Division of the General Motors Corporation. Before going into service, the complete train was exhibited at 13 places in Illinois. The timetable of the new train, which is called the "Meadowlark," is arranged so that residents in Southern Illinois can travel to Chicago in the morning, and have the afternoon available for their business before returning home. The 345 miles between Cypress and Chicago are covered in 7 hr. 10 min., with 19 intermediate stops. Departure from Cypress is at 5.15 a.m., arriving in Chicago at 12.25 p.m. The southbound train leaves Chicago at 5.10 p.m., and arrives in Cypress at 12.20 a.m.

#### ITALY

##### Track Squatters Stop Trains

The practice among certain sections of the public in recent months of holding up trains on the open line by way of showing their dissatisfaction with existing services, or in order to get easier access to trains than in overcrowded stations, has become a serious nuisance in various regions of Italy. A message, therefore, was addressed recently by the Italian Minister of Home Affairs to all provincial prefects and police chiefs, reminding them that the law provides for sentences of from six months' to fifteen years' imprisonment for holding up trains in this way. It remains to be seen whether this will deter workmen from lying down on the track (the usual method of imposing a hold-up) instead of seeking accommodation in the

comfortless goods wagons fitted with wooden benches which are intended for their short journeys.

#### FRANCE

##### Railway Rates to be Increased

Although it is claimed officially that the deficit of the French National Railways will not be more than fr. 3,000 million for 1946, there is much talk of a further increase in passenger and goods rates in order to balance the railway budget in the near future. It is stated that the S.N.C.F. is preparing an entirely new schedule of goods rates, based as far as possible on the prime costs of transporting each category of freight, but critics believe that the rating of goods *ad valorem* is likely to persist to a great extent in the new tariffs. Balancing the budget is the main object in view, and some observers consider that the S.N.C.F. has made good headway towards achieving this aim. A brochure issued recently by the Ministry of Public Works & Transport states that "the S.N.C.F. will be one of the few national enterprises which in 1946 will balance their budget by less than about 3 per cent. The S.N.C.F. expenditure will amount, in fact, to nearly fr. 123,000 million, while the total receipts for the year, based on the results obtained in the first ten months, may be estimated at fr. 120,000 million." But after explaining that the improved results are due to cuts in general expenses, reduction of staff, and increases in passenger and goods rates, it is admitted that sinking fund payments were suspended for 1946.

##### Normal Services from Paris Est

The new viaduct to the east of Nogent-le Perreux-Bry Station, about 10 miles (16 km.) from Paris Est, carrying the Paris—Chaumont—Belfort—Mulhouse main line across the Marne, was opened to traffic on December 14, 1946. The viaduct is 2,723 ft. (830 m.) long, and replaces the one destroyed by the retreating Germans in 1944. The site of the new viaduct has been changed, and its approaches re-aligned, with the result of a

slight shortening of the distance between Paris and Mulhouse. This is now 305½ miles (492 km.). The opening of the viaduct enabled the through running of trains between Paris Est and the Mulhouse main line to be resumed. No temporary bridge had been built over the Marne, and local trains were worked from, and to, the Bastille Station in Paris, using the branch which leaves the main line at Verneuil-l'Étang, 33 miles (53 km.) from Paris Est. Long-distance fast trains, including the "Arlberg Express," worked from, and to, the Gare de Lyon, using the Paris—Montereau section of the Paris—Lyons main line, and the branch from Montereau to Flamboin-Gouaix, 59.6 miles (96 km.) from Paris Est. It was after the opening of the Marne bridge that a high-speed railcar service was introduced between Paris, Belfort, Mulhouse, and Basle, as recorded in *The Railway Gazette* of December 27, 1946.

#### EIRE

##### Oil-Fired Goods Locomotive

Experiments have been carried out by Coras Iompair Eireann with a 0-6-0 locomotive converted for burning oil fuel. Large-scale conversions on these lines are unlikely, but it may be decided to adapt a limited number of engines to tide over a period of coal shortage. As has been announced already, the company proposes eventually to render itself independent of coal supply difficulties by the adoption of diesel-electric motive power on a large scale.

The oil-fired locomotive belongs to a class of medium goods engines, having a tractive effort of 21,000 lb. Two tanks with a capacity of 1,350 gal. of crude oil have been fitted in the tender, giving a range of action of approximately 230 miles. Complete refuelling can be carried out in about 15 min. Among the tests undergone by the locomotive has been the haulage of a train of 40 loaded wagons, weighing over 400 tons, from Dublin to Cork, returning with the night mail train to Dublin. Results with this engine are reported to have given every satisfaction.

#### Publications Received

**Golden Arrow Album.** By George C. Drury. London: Ian Allan Limited, 282, Vauxhall Bridge Road, S.W.1. 7 in. × 4½ in. 32 pp. Price 1s. 6d.—The restoration of the Southern Railway "Golden Arrow" service between London and Paris in April, 1946, was welcomed as a sign of a return to normal times. If austerity has not been dispelled during the year as rapidly as then was hoped, this famous train and its connections, at least, have maintained their standards of comfort and service. The "Golden Arrow Album," and its pictures, therefore, not only form an attractive souvenir for those who have made the journey, but will evoke pleasant memories and the desire to travel among those whom business keeps at home.

**G.W.R. Engines. Names, Numbers, Types & Classes.** By W. G. Chapman. London, 1946: The Great Western Railway, Paddington Station, W.2. 7½ in. × 4½ in. 116 pp. Illustrated. Price 2s. 6d.—The first post-war edition of the G.W.R. engine book has now been published, and in addition to presenting an illustrated review of the company's steam locomotive stock as in former years, includes chapters on recent and forthcoming developments

such as oil firing, diesel railcars, gas turbines, and G.W.R. engines at war. The book begins with an historical survey of G.W.R. locomotive practice, and then illustrates the standard classes with half-tone reproductions and dimensioned drawings, giving lists of names in order of the engine numbers where applicable. Named engines are also indexed alphabetically at the end of the book, with references to the pages on which the classes to which they belong are described. Several well-known G.W.R. expresses form the subject of whole-page illustrations, and a table is given of runs booked at over 60 m.p.h. in 1939.

**The Law of Trade Unions.** By H. Samuels. Second Edition. London: Stevens & Sons Ltd., 119/120, Chancery Lane, W.C.2. 8½ in. × 5½ in. 96 pp. Price 6s. net.—The Trade Disputes & Trade Unions Act of 1927, passed after the General Strike of 1926, has been repealed by a new Act passed last year. Lawyers and trade union officials, therefore, will welcome a textbook which sets out the essentials of the law affecting trade unions as it now stands. Mr. Samuels traces the course of industrial legislation and explains the rules, contracts, and registration of unions. In addition, there are chap-

ters devoted to strikes and lock-outs, the political fund of trade unions, and property and liabilities. The effect of the new Act is presented concisely in one of two appendices.

**By Singleness of Purpose.**—J. Stone & Co. Ltd., Deptford, S.E.14, have produced an attractive publication recording the activities of the firm during the war. The title is taken from one of Mr. Churchill's speeches. Deptford has been linked closely with the Navy since Tudor times, and a century ago Stone & Company was an Admiralty contractor. In the recent struggle it has contributed to the Royal Air Force and the Army no less than the Navy. Marine propellers, castings for aero engines, and seaplane lifting gear are but three of the firm's many wartime products. For fifty years, trains have been equipped with Stone's lighting, and in peacetime, train lighting and air-conditioning systems were supplied to railways all over the world. The energies of the electrical department were diverted in wartime to meet the needs of the Services, although air conditioning continued to be supplied for ambulance trains. These and other activities of the firm find mention in the hundred pages of this publication, which is illustrated lavishly.

## Developments in Railway Lighting

*Contributions of the lighting engineer to efficient operation and the safety of passengers*

IN our December 20 issue we referred briefly to a paper on railway lighting, presented to the Illuminating Engineering Society on December 10, by Mr. A. Cunningham, Assistant for Lighting, Heating, and Water to the Chief Civil Engineer, Southern Railway, and Mr. G. W. Golds, also of the Chief Civil Engineer's Department. In presenting the paper, the authors illustrated many items of equipment with lantern slides, and showed a film of an experiment in lighting a marshalling yard by means of lamps suspended from a barge balloon.

### Locomotive Depots

Dealing with lighting in locomotive depots, it was pointed out that fittings had to contend with the effects of sulphuric acid, and several examples of corrosion were exhibited. It had been found that a simple porcelain lampholder with a skirt to cover it provided the best solution.

Another problem was how best to light inspection pits. Recently, a scheme of fluorescent lighting for inspection pits had been tried on one railway, and had proved to be almost ideal from the point of view of illuminating the under-gear of the locomotive. In this case, the inspection pit was constructed of pre-cast concrete sections, each 6 ft. in length, and each section was constructed with a prefabricated recess for the fluorescent tube equipment on one side and a through duct for cabling on the opposite side. When the sections were assembled to form the pit, they were fixed with the fluorescent tube recess alternately one side and the other of the pit, and the alternate provision of cable duct thus enabled the whole installation to be wired readily. The tubular lighting was protected by a plate-glass front flush with the wall of the inspection pit.

In the design of some modern locomotives, provision had been made for self-contained electric lamps to light important working parts. Another development, giving more adequate lighting for repair work on engines, was the adoption of a form of trolley which could be wheeled close to the side of an engine where, for example, a valve movement might require inspection. On the trolley was mounted one fixed fluorescent tube at about 18 in. above the ground, and, at a considerably higher level, a swivelling arm carrying a second fluorescent tube capable of being brought by a simple control to any particular level or angle required for the close inspection of the engine. As the trolley was fed from the normal 50-volt supply, a step-up transformer was employed to give the voltage for serving the two fluorescent tubes.

### Interiors of Box Wagons

It might be thought that the lighting problems of goods depots were similar to those of a factory, but here there arose the special question of projecting light into the interior of box wagons. In some cases, the design of the shed lighting had been arranged so that a fair proportion of light was directed by angle reflectors so spaced that one occurred roughly opposite each open door. This, of course, depended to some extent on the wagons being of approximately the same dimensions and their being berthed always more or less in the same positions in the shed.

Another device was the fixing of plug

points flush with the edge of the platform, into which could be plugged portable lamps with cab-tyre protected leads; these lamps could be hung temporarily inside the box wagons and transferred as work moved along the loading dock. A further method of using electric lamps for lighting interiors of the wagons was tried some years ago with a certain amount of success. Two strained wires were stretched, out of ordinary reach, along the line of the platform, and from these bare wires hung an insulated bar with a lamp and angle reflector attached at its lower end, so that it hung just in line with the door opening of the wagon. The connections were wired from hooks to the terminals of the lamp, and the hanging device could, of course, be fixed anywhere on the strained wires.

Recently, it had been suggested that the problem should be treated in a different manner. Why should the box wagon be made entirely of opaque material? In these days there surely should be available an almost unbreakable translucent material which could be used to form the greater part of the roofs of wagons, enabling their interiors to be illuminated by the ordinary shed lighting irrespective of where they stood.

### Barrage Balloon Experiment

Shunting yards called for special local illumination at various points, but it was advantageous to provide a general background illumination over the whole area.

A trial had been made with what might be described as "magnified moonlight," provided by 10 1,000-watt lamps suspended from a barrage balloon at about 150 ft. above the ground. The first reactions to this lighting were generally favourable, and it was now the intention to instal something of a permanent nature, which might take the form of a light-steel mast surrounded by a ring-shaped lighting fitting. This fitting would be designed to rise and fall by means of a winch, thus enabling maintenance to be carried out without climbing the mast. Such a design also would permit of the fitting being lowered in case of foggy weather, although dense fog seldom occurred below 150 ft., unless so widespread as to stop all shunting.

The authors showed a slide of a signal box in which the lighting had been designed to eliminate reflections in the windows. It was the present tendency to keep signal box lighting as dim as possible consistent with the observance of instruments and diagrams. Local screening of lights eliminated almost entirely reflections in the main windows, and at the same time the signalman's eyes could adapt themselves rapidly to observing traffic movements in the darkness outside.

Although the problem of stairway lighting was not peculiar to railways, the conditions were exceptionally varied. Contrary to what might be expected, experience showed that accidents on stairways were more frequent when traffic was light than when crowds were using the stairs. The main features which governed the satisfactory lighting of stairways were:—

(1) The need for contrast between the front edge of a tread and the remaining portion of the tread. Also (to prevent confusion in ascending) there should be contrast between treads and risers.

(2) Avoidance of glare from the light sources.

(3) Avoidance of confusing cross-shadows.

With regard to the first, experience showed that this was by far the most important feature, and it had been found that, with an absence of the necessary contrast, no amount of care in providing either maximum brightness or maximum diffusion from the light sources would render the stairway safe from mishap. If the nosing of a tread and the tread itself were all of one uniform colour and brightness, it was obvious that, when viewed from above, the nosing of the tread would not show up against the similar background provided by the next tread, and the result was that the stairway appeared to be a uniform slope. The problem of providing the necessary contrast was difficult because of wear and tear and dirt. One of the most promising devices seemed to be the provision of a very hard nosing, either of bright metal or of a gritty form of tiling.

### Fluorescent Tubes

It was fairly certain that there would be improved quality of illumination as well as increase in the general level of lighting values adopted in all departments of the railways. The fluorescent tube had set up a new standard in respect of the quality of light, and it was this feature of special quality which should be stressed rather than the less obvious economy in running costs.

Many of the problems met with in railway work could be solved by the use of fluorescent tubes. Clerks serving in public inquiry offices had a severe visual task in referring constantly to timetables, and in the invoice office of a large goods depot a good deal of eye strain was liable to occur when cross-references had to be made to tables of special charges propped up in front of a clerk at a desk. Attention might be drawn, in passing, to experiments that were being carried out in the application of fluorescent tubes to passenger coaches, which should give a much better reading light than had hitherto been enjoyed.

### Illumination of Station Signs

Developments would occur also in the illumination and display of direction signs, station names, and train service information. It was probable that direction signs would be designed increasingly in glass or plastic material, with interior lighting.

The practice of making every lamp on a platform exhibit in some form the station name had to be viewed from a new angle when long fluorescent tubes replaced individual lamps. With modern lighting, names would be visible wherever they were fixed, and it remained for display experts to evolve a sign readily distinguishable from advertisements, and to settle the intervals at which such signs should be displayed.

Discussing the design and lighting of train indicators, the authors spoke of the simplicity and effectiveness of the signpost type at the platform entrance. A proposed design was shown for this form of indicator, with a canopy to direct the lighting downwards on to the signpost arms and to provide illumination for the ticket collector.

The authors concluded with a short discussion of the influence of lighting on staff welfare and efficiency, which was fully recognised by railway managements, who had shown themselves ready to authorise expenditure on lighting improvements.

## New Locomotives for the Central and Southern Railways of Peru

Powerful 2-8-0 passenger type for 1 in 25 grade standard-gauge main line

IN *The Railway Gazette* for March 8, 1935, three 2-8-0 locomotives built by Beyer, Peacock & Co. Ltd. for the Central Railway of Peru were described and illustrated. They were built to the general designs of Mr. T. Jefferson, M.I.Loco.E., the Chief Mechanical Engineer, and were an immediate success; in the next year, a further three were ordered, and in the year after, another three.

The Southern Railway of Peru, which, like the Central Railway, is owned by the Peruvian Corporation, then adopted the type with slight modifications, of which the most important was a 4 ft. 8 in. coupled wheel instead of a 4 ft. 4 in. By the beginning of the war, a further two for the Southern Railway had been manufactured. All these locomotives have put up remarkable mileages and are exceptionally reliable machines.

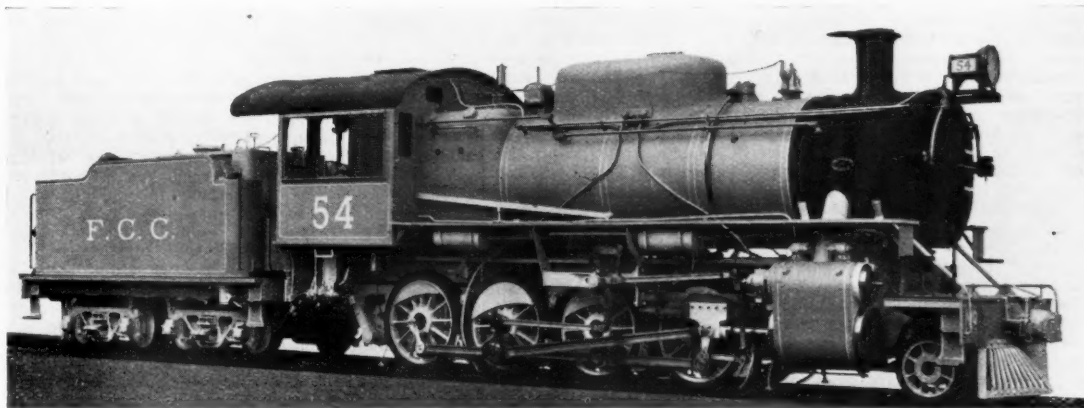
The locomotives of this type now described, known as the "40" class, are the same as regards principal dimensions, but embody various improvements. Ten have been completed and are being shipped, six destined for the Central of Peru and four to the Southern of Peru. The total number—for both railways—is now twenty-two, all built by Beyer, Peacock & Co. Ltd., to whom we are indebted for the following illustration and particulars.

Both lines, which are standard gauge,

motives are almost perfectly proportioned for oil-fuel burning, as there has been no firebox stay breakage and very little breakage of bridges between the tube holes. The condition of the fireboxes, therefore, is nearly as good as new, even after the great mileage run. A further six locomotives of this type are on order with Beyer, Peacock & Co. Ltd.—four for the Central of Peru and two for the Southern.

The principal dimensions of the locomotives are:—

	For Central Railway 20 in. by 28 in. 4 ft. 4 in.	For Southern Railway 20½ in. by 28 in. 4 ft. 8 in.
Cylinders, dia. × stroke	23 ft. 7 in.	23 ft. 11 in.
Coupled wheels, dia.	14 ft. 3 in.	15 ft. 3 in.
Wheelbase—		
Engine	49 ft. 2½ in.	49 ft. 2½ in.
Rigid	200 lb. per sq. in.	200 lb. per sq. in.
Total engine and tender		
Boiler pressure	137 sq. ft.	137 sq. ft.
Heating surface—		
Firebox	416 sq. ft.	416 sq. ft.
Large tubes	1,139 sq. ft.	1,139 sq. ft.
Small tubes	25 sq. ft.	25 sq. ft.
Thermic syphon		
	1,717 sq. ft.	1,717 sq. ft.
Superheater (inside)	341 sq. ft.	341 sq. ft.
Total	2,058 sq. ft.	2,058 sq. ft.
Grate area	28 sq. ft.	28 sq. ft.
Tractive effort at 75 per cent. boiler pressure	32,300 lb.	31,520 lb.
Factor of adhesion	4.5	4.77
Maximum axleload	16½ tons	16½ tons
Weight of engine in working order	74 tons	76 tons
Weight of tender in working order	40 tons	37½ tons
Weight of engine and tender in working order	114 tons	113½ tons
Water capacity of tender	3,100 gal.	2,650 gal.
Oil capacity of tender	1,465 gal.	1,465 gal.



General view of the new 2-8-0 locomotive for the Central and Southern Railways of Peru

climb to great heights over severe grades and curvature. The more spectacular is the Central of Peru main line, which rises to 15,805 ft. from sea level, including nearly 74 miles of continuous 1 in 25 grade, with the maximum at 1 in 22, taking into account the absence of compensation for curvature. The sharpest curves have a radius of 328 ft., and there are no less than 41 bridges, 61 tunnels, and 13 reversing stations.

Despite their large coupled wheels, these locomotives have proved most reliable. Over 700,000 km. have been run before the first general repair, with only a partial change of tubes on a line where boiler repairs are a very serious matter because of oil burning combined with the exceptional severity of the grade and conditions.

The Chief Mechanical Engineer is of the opinion that the boilers of these loco-

The boiler, which has a firebox of the Belpaire type, is oil fired and fitted with an M.L.S. multiple-valve regulator and superheater. The firebox has one thermic syphon and both are made of Colvilles double-crown steel. Flexible stays are fitted in the breaking zones. The tubes are presserised and copper ferruled at the firebox end.

The fittings on top of the boiler, enumerated from the front, are the bell, Gresham & Craven Duplex feed heater and check valves, sandbox, and steam dome with stop cock. The sandbox and dome casing are made as one unit for the first time for the Central of Peru locomotives and are separate for the Southern locomotives. Safety valves are of the Ross pop type.

The boiler is fed by one No. 10 Gresham & Craven self-acting hot-water injector

fitted with warming cock on the right-hand side of engine, one Davies & Metcalfe No. 10 Class "J" exhaust steam injector on the left-hand side, and one injector starting valve for exhaust injector fitted.

The water gauges are of the Klinger Reflex type, and Klinger sleeve test cocks are fitted also to assist water-level indication. The oil-burning and rail-cleaning jets are supplied with superheated steam. The cylinders of cast iron have pistons of the box type, fitted with three rings, and the steam chests have by-pass valves. Stone's automatic drifting valve also is fitted.

Crossheads are of Laird type and the valve gear is Walschaerts, with hand-screw

reversing gear. The return crank is fitted with S.K.F. ball bearings. The front radial arm bogie has roller-bearing axleboxes, also of Skefco manufacture, and is compensated with the leading coupled wheels; the intermediate, driving, and trailing wheels form the second group. The engine frames are of the bar type made from frame quality-steel slabs, and the whole chassis is braced exceptionally strongly with steel castings to withstand the severe strains of continuous all-out working on 1 in 25 grade.

The Ajax system of grease lubrication is applied to the engine as follows: hard grease to the coupling and connecting rod bearings and the coupled wheel bosses; soft grease to the motion and reversing gear, coupling rod knuckle pin, brake details, coupled axlebox slides, crosshead pin, radial arm pin spring gear, and so

on. The coupled axleboxes have Ajax keeps.

The connecting rod big ends are fitted with floating bushes. The axleboxes have cast-iron wedges and shoes arranged to allow for replacement by Franklin type by the railway. These wedges and shoes are greased through nipples on the axleboxes. Connecting, coupling rod bushes, and axlebox bearings are of Stone's bronze.

Air sanding is applied to the front of the leading wheel and the rear of the driving wheel. The air sander is of the railway company's type on the Central of Peru and of Gresham & Craven type on the Southern.

Lubrication of the cylinders and piston valves is effected by one Wakefield's A.C. type sight-feed lubricator arranged on the fireman's side. The cab sides are fitted with windows to the inside and louvres

outside. Upholstered seats and arm rests are provided on both sides of the cab. Wedge-type buffers are placed between the engine and tenders and the intermediate drawbars of the Franklin Unit safety type. Flexsteel flexible pipe couplings for steam and oil are provided between engine and tender.

Westinghouse brake is arranged for engine and tender and train. In addition, the tender is fitted with a hand brake. Brake blocks are fitted to all coupled wheels of the engine. An indicator plate is fitted on the back of the cab giving the number of gallons of oil represented by varying indications on the dipper rod.

The tender is carried on two four-wheel centre-bearing type bogies with cast-steel side frames of the "double truss" type and bolsters. The wheels are of solid rolled steel. The axleboxes, which are separate from the frame, are of cast steel

with Stone's bronze bearings and Armstrong oilers.

Water and oil tanks are of mild steel and welded construction. The water tanks have been sprayed inside by the metalisation process with a coating of zinc to resist corrosion.

The electric lighting equipment by J. Stone & Co. Ltd. has finally to cover both engine and train lighting. A temporary 500-W. generator has been fitted by Beyer, Peacock & Co. Ltd., but this will be changed in Peru to a 5-kW. generator for Central and an 8-kW. generator for Southern engines. Other fittings include Visco Alliance automatic couplers, Chatelier counter pressure brake and Stone's Deuta speed indicator.

All these locomotives have been built to the inspection of Messrs. Livesey & Henderson, Consulting Engineers to the Peruvian Corporation.

## Testing L.N.E.R. Inquiry Office Service

*Selected clients were invited to award marks for staff efficiency, and analysis of their estimates has produced useful results*

**KINGS CROSS** and Liverpool Street passenger inquiry offices, handling between them most of the personal and telephone inquiries made of the L.N.E.R. in London, have built up already a reputation for good service. But however good inquiry office service may seem from behind the counter, the final test must be the effect produced on customers. The company, therefore, decided to enlist the aid of a few selected customers, who would be invited to make test inquiries either personally or by telephone at times and dates chosen by themselves, and to report results.

A "rating" form was prepared, with "Interest" as the first heading, since it is the experience of Mr. A. M. Cooper, author of the American publication "Employee Training," that the key to success in public contact work is to make the customer feel that he or she is being treated as an individual, and that the person answering an inquiry is taking an interest in the inquirer and his problem. Other headings for points were information, speech, appearance, and politeness.

It was clear from the start that test inquiries could yield fair results only if those who made them were unknown to the inquiry office staff, since otherwise special treatment would have been inevitable. The scheme was explained to the staff before it began, and they were told that results would be passed to them as they were received, and that whether results were good or bad, no attempt would be made to identify the individual who had dealt with any particular test inquiry. The aim was to test office efficiency, not to check individual performance; and by thus explaining the scheme, a second aim was served, that of increasing the interest of the staff in their work.

The next step was to "brief" the testers. The scheme and rating forms were explained to them at a meeting, and they were then given a short dramatisation of a typical inquiry by two volunteers who were not members of the inquiry office staff. As expected, individual ratings of this first sample varied considerably. These ratings were, therefore, analysed and discussed; and a second dramatisation was then given. This time the ratings came together within about 10 per cent. A standard had been established and the testers were then invited to carry on.

In all, 46 tests were made and rating forms submitted over a period of nine months, each form being promptly passed on to the staff concerned after removing anything that might lead to identification of the tester. Generally speaking, results were excellent, in 17 cases 100 per cent.

The final summary showed an overall average for personal (counter) inquiries at both Kings Cross and Liverpool Street of 91 per cent. out of a possible 100; telephone inquiries showed 80 per cent. at Kings Cross and 74 per cent. at Liverpool Street. Investigation soon disclosed the reason for the Liverpool Street result. The telephones there, unlike those at Kings Cross, which have light signals, still had bells, causing unnecessary and distracting noise, and this is being put right.

To round off the experiment, statements showing the summarised results of all tests were sent individually to every member of the staff in the two offices, together with a covering note reminding them of the object of the tests, commenting favourably on the excellence of the results, telling them that at the end of the first phase of the experiment their representatives would be introduced to the testers, and asking for frank opinions. To assist frankness, a short questionnaire was enclosed with a wide selection of possible replies.

The staff were asked simply to tick the reply they chose, and not to sign the form, so that it would not be possible to identify individual replies. In fact, nearly half the staff added comments of their own, many of them valuable and all very much to the point.

### Staff Discussion Groups

The meeting at which representatives of the staff were introduced to the customers who had been carrying out the tests was an interesting occasion for everyone present. The questionnaire, with a summary of the answers, was handed round, and it was agreed that both initial objectives had been achieved: the customers had confirmed the general excellence of the service being given; and 82 per cent. of the staff said in their opinion the scheme was either interesting, encouraging, or valuable.

Arrangements were made for the inquiry office staff to meet periodically in discussion groups led by their own supervisors

to discuss the finer points of their own work, and these discussion meetings (except at peak periods) are being continued. Renewal of the testing arrangements—with a fresh and still necessarily unknown set of customers—is under consideration, but, in general, it is felt that new ground has been broken, and that results are interesting enough to be placed on record.

## Doubling the Gotthard Route

**GOOD** progress is being made with doubling the section of the Gotthard route between Brunnen and Sisikon. Here the line runs between the Lake of Lucerne and the steep mountains skirting its eastern shores, so that engineering difficulties have been very great. The original intention of making the new line follow the shore more closely had to be rejected, and it was found necessary even to abandon a short section of the existing line in the neighbourhood of the Mythenstein Tunnel, where the line was endangered by overhanging boulders.

The northern part of the new Morschach Tunnel contains the two tracks, which split up into two single-track tunnels further south. One of the tracks soon leads into the open, linking up with the existing track, but the other has had to be extended in tunnel to join the existing line still further south, near Petersort. After a brief run in the open, trains will enter the new Frohnalp Tunnel, which is just over 9,000 ft. long. At its southern end, near Sisikon, the line will link up with the existing double-track Sisikon—Flüelen section.

The length of the new Brunnen—Sisikon section is 3½ miles, of which over 2½ miles are in tunnel. The route of the new line is slightly shorter than before, and the curvature is improved, the minimum radius now being 1,500 ft. The maximum gradient is 1 per cent., with the exception of a short rise at 1·2 per cent.

Work on this section was begun in October, 1944, but was delayed by shortage of materials and labour. It is now expected that the second track will come into operation with the 1948 timetable.

The piercing of the northern portion of the Morschach Tunnel was reported in *The Railway Gazette* of March 1, 1946. When work on the Brunnen—Sisikon line is completed, only the Melide—Maroggia section will remain to be dealt with, the Rivera—Taverne section having been doubled in 1946, as recorded in *The Railway Gazette* of November 22, 1946.

## Power Interlocking in Spain

*Several systems have been applied in Spain, sometimes in association with automatic signalling*

THE first installations of interlocked mechanical signalling in Spain were provided in 1882 by Saxby & Farmer at the Granollers and Martorell Junction, at the level crossing of the Northern and M.Z.A. lines in Barcelona, and at Lérida, at the junction of the line to Tarragona.

In 1893, the M.Z.A. applied the hydraulic power signalling system to its Madrid (Atocha) terminus, and later at Villaverde Alcázar, Seville, and elsewhere. The French route-lever system of Bleyne and Ducouso, introduced at Bordeaux in 1903, was adopted two years later for the Northern company's Madrid (Príncipe Pio) terminus and at the M.Z.A. station of Pueblo Nuevo (Barcelona) in 1908. In 1912, this system was replaced at Madrid by the French M.D.M. hydro-pneumatic apparatus.

The French Thomson-Houston apparatus was applied later to the M.Z.A. Barcelona terminus; this remains, with its 121 levers, the largest power interlocking in the country. Other designs of power equipment appeared later, such as the German A.E.G. system at the Venta de Baños marshalling yard of the Northern, and the American G.R.S. system at, and near, Barcelona, as part of an installation of automatic signalling, as well as on the Northern line and on the Madrid and Barcelona underground systems. In more recent years, the relay interlocking principle has found favour and been applied by the Spanish Ericsson Company at Corunna, Santiago, Pozuelo, and elsewhere.

The Pozuelo installation, on the electrified route of the former Northern Railway main line from Madrid through Vallalba to Avila and Segovia, is typical of the class of work now being carried out, and its principal features are described in this article.

### General Layout

Pozuelo Station consists of two through main tracks, with crossovers at each end, and two additional running lines on the eastern side, which can be reached by any incoming train and used for departures towards Madrid or Villalba. Complete

track circuit automatic signalling exists between Madrid and El Escorial, with 3-aspect colour-light signals. (The indications are at present red for stop, green for caution, and yellow for proceed.) The two home signals have the double red absolute stop aspect, for a long time standard on the line.

The starting signals have no caution aspect and cannot be cleared unless the

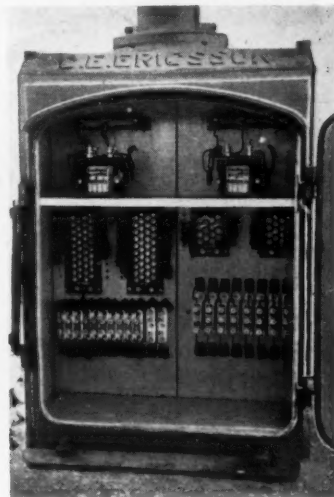
nals and the automatic signals next in rear, which act as outers for the station, carry lunar-white position-light direction indicators to show whether the direct or a diverging route is set up. In the latter case, the driver receives in addition a caution indication at the home signal.

### Position of Home Signals

The clear aspect is given at that signal only if the direct route is set up and its starting signal has been cleared. Although the automatic signalling works on the normally clear principle, the station signals generally are kept at danger. As is frequently the case on the Continent, the



Electric ground lock



Signal apparatus case

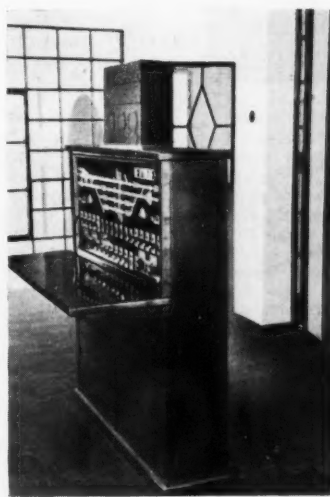
next automatic signal in advance is at caution or clear. They have, however, a white shunt forward aspect which is independent of this control. All running signals normally are subject to "stick" or disengager control, but this can be cut out, if required, for the through main-line routes, leaving the working completely automatic in accordance with well-known practice. To conform to existing rules soon to be modified, the home sig-

home signals stand at a considerable distance out, practically serving as outer homes and affording sufficient protection to shunting movements.

The individual lever principle is used. Operation is effected, however, from a panel with the controlling switches free at all times and carrying the usual track-circuit indications, signal repeating lights, and any other signs necessary to a correct manipulation of the apparatus. Inter-



Traffic lights at crossing



Interior of signal box



Dwarf-type starting signal



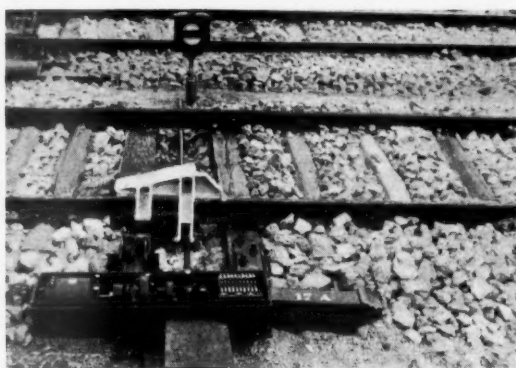
Track circuit joint and connections



Electrically-locked hand points



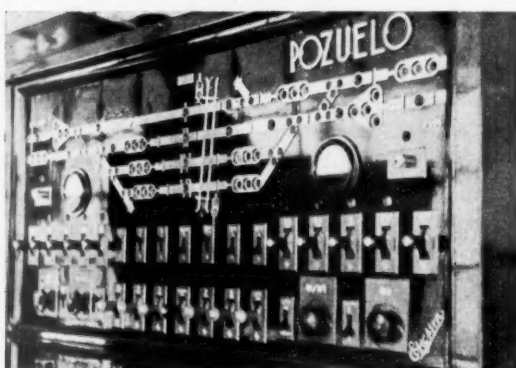
Electrically-operated points



Electrically-operated derailer



Level crossing barriers



Control panel in signal box

locking is effected exclusively by circuits and relays on well-known methods. Complete track and approach route-locking is applied, with a time release for the latter, should a change of route be necessary after a train has approached within a certain distance and then stopped at the home signal.

The outer and home signals are of the multi-lens type, with tubular post and apparatus case at foot, mounted on a concrete foundation. The starting signals are, however, of the dwarf pattern. All points have electrically-lighted point indicators giving signs similar to those used in Germany and elsewhere. There are no slip points at Pozuelo, but similar installations at Corunna and Santiago comprise several. In that case, the four switches of a double-slip are indicated on one

combined point indicator of the Cauer type, now standard in Germany.

Points are operated generally by electric motor, with internal locking of the point tongues, and are trailable, but there are also some hand-operated points and scotch-blocks controlled by local electric locks, released from the signal box. Motor-operated points are arranged also for operation on site by a foot-contact, provided the necessary release is given by the signalman, which pre-supposes that all signals concerned are at danger. This facility is valued greatly in Spain and frequently applied in new work.

At the northern end of the station is a level crossing, with traffic warning lights and bells and electrically operated lifting barriers, operated either from the signal box or from a gateman's hut, as may be re-

quired from time to time. When the station is working automatically, following the operation of the "King" switch control, the traffic lights and crossing barriers will operate to close the highway as soon as a train reaches the outer signal, in either direction, and open it again when the train has passed clear.

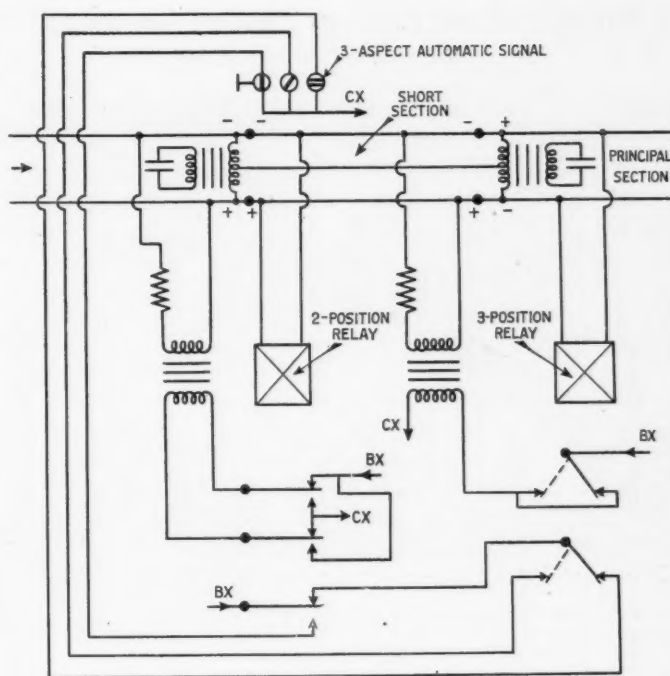
#### Track Circuits

The track circuits within interlocking limits are all of the single-rail a.c. type, leaving one rail free for the return of the 1,500 volt d.c. traction circuit, with separating transformer between track and relay, which is of the 2-element vane type. The return traction rail is bonded in parallel throughout the area. The track circuits outside station limits on the automatic signalling sections were installed

some years ago between Pozuelo and Madrid as polarised a.c. circuits, giving control over the clear aspects without line circuits. They were modified when electric traction was introduced, to enable this working to be retained without the risk, otherwise attendant, of false operation should the insulated joints break down. As shown in the accompanying diagram, this has been accomplished by inserting at the entering end of each block section a one-rail track section with insulated joints in both rails.

The ordinary sections are of the well-known impedance bond type, but the additional section has no bonds and the traction current passes across it through a central conductor joining the bonds of the adjacent sections. The track relay of the short section has only two positions, and if energised in the reverse direction, following a rail-joint breakdown, will operate to open its contacts and maintain the relative signal at red. The circuits for the caution and clear aspects depend first on this relay being energised correctly, and secondly on the position of the relay of the principal or main section, which itself operates to correspond with the polarity of that section in accordance with the condition of the signal in advance, as determined by the position of the short section relay at that point.

Power is taken from the Pozuelo town supply, supplemented by a standby generating set, at 220 volt, 3-phase, 50 cycles. Point and barrier operating motors are single-phase repulsion machines fed through isolating transformers. The signal and electric lock circuits operate at 110 volts, and the indication circuits at 6 volts. A number of relays in the signal box are of d.c. pattern operated at 24 volts through rectifiers.



Additional safety section in track circuits

The wiring system has been constructed generally in accordance with American (A.A.R.) specifications, fully labelled for rapid detection of faults. The interlocking limits cover a distance of about 4 km. (2½ miles).

The above details are taken from articles in our contemporary *Ferrocarriles y Tranvías*; the photographs for the illustrations have been supplied by the *Compañía Española Ericsson S.A.*, of Madrid, which firm provided all the equipment.

## Otter Creek Bridge Repairs, Chicago Great Western Railway

*Disintegrating 25-ft. concrete arches, 50-ft. long, were refaced with 3-gauge Armco galvanised corrugated sheeting and the intervening space filled with pressure grouting*

THE Chicago Great Western Railway crosses Otter Creek, near Bristow, on a section of the Chicago-Omaha line which was built in 1903. The bridge over the creek consists of twin 25-ft. semi-circular concrete arches, the barrels of which are 50 ft. long; the springing is about 10 ft. above the bed of the stream. In course of time, moreover, much of the fine aggregate in the barrels became disintegrated and fell out.

The parapet walls also were cracked badly and bulged outwards as much as 12 in. in places; the face- and wing-walls and the pier cutwater and buttress, too, were cracked and disintegrated.

### Two Methods of Repair

Two methods of repair were considered: (1) to face all the walls with a 2-ft. R.C. jacket and the arches with similar 1-ft. liners, and (2) to face the walling with 1-ft. R.C. jackets, the arches with a lining of Armco galvanised corrugated sheeting, with the space behind it pressure grouted, and the parapet walls with 2-ft. thick R.C. facings. The second method was decided on, as it did not reduce the waterway appreciably, and also partly for economic reasons.

Work began in the autumn of 1945 and

the walling and arching protection was completed before frost put a stop to it; the parapets were completed in the spring of 1946.

Excavation was first carried down to bed rock along the pier and each side wall—some 15 ft. 6 in. to 18 ft. 6 in. below springing—and ¾-in. Hibond reinforcing bars at 1-ft. centres vertically and horizontally were fixed and anchored securely into the old concrete with ¾-in. hook dowels.

Shuttering was erected and the concrete poured in the arches up to springing only. Here, anchor channels were embedded in it to carry the Armco sheeting in the arching.

This sheeting consisted of 36 prefabricated semi-circular rings; the sheets were of 3-gauge metal and 18 in. wide, bolted together with the nuts on the outer side, and joints staggered; bolting up of the rings *in situ* was a simple matter from scaffolding inside each arch. The average space between the sheets and the old concrete arches was about 4 in. Grout couplings 2 in. in dia. were provided at about 6-ft. intervals in the top sheets, and the grout used was a 1:6 cement-sand mixture forced into place under a pressure of 100 lb. per sq. in.

The work was carried out under the general direction of Mr. W. C. Groth, Chief Engineer, and Mr. W. R. Roof, Bridge Engineer, Chicago Great Western Railway, by the Construction Department of the Des Moines, Iowa office of Armco Drainage & Metal Products, Inc. For the particulars of these repairs we are indebted to our American contemporary, *Railway Engineering & Maintenance*.

EXHIBITION OF ROMNEY, HYTHE & DYMCHURCH LOCOMOTIVE AT WATERLOO.—To mark the twenty-first birthday of the Romney, Hythe & Dymchurch Railway, an exhibition has been arranged at Waterloo Station, Southern Railway, opposite No. 11 platform, of R.H.D.R. locomotive No. 8, *Southern Maid*. The exhibition, which closes on January 18, was officially opened on January 4 by Mr. R. M. T. Richards, Traffic Manager, Southern Railway, who was introduced by Major J. T. Holder, General Manager, Romney, Hythe & Dymchurch Railway. Proceeds from the collecting boxes at the exhibition are being devoted to the Railway Benevolent Institution. Twenty-one years ago the 8 miles of track from Hythe to New Romney was opened by the present King (then Duke of York) and a year later the system was extended to Dungeness. It played an important part during the recent war, when the Army took over control. A considerable task of rehabilitation has since been necessary. Already the railway is open from Hythe to New Romney, and over 300,000 passengers have been carried since the spring of 1946.

## Bethnal Green Station, London Transport

*A probable standard for future design*



*Fluorescent lighting throws scarcely any shadow on the platform*

**T**HE new London Transport station at Bethnal Green, which is on the recently opened Liverpool Street-Stratford extension of the Central Line, provides in its design several points of interest, and, with any modifications that actual use in service may suggest, it is considered very probable that it will set the standard for underground tube stations for some years to come.

### Ample Circulating Area

As the passenger steps out of the train at Bethnal Green, or as he walks into the station from the street, his first impression is one of spaciousness, which sensation is produced partly by the ample area provided for passengers to circulate in the booking hall and at the foot of the escalators, but largely by the impression of height which is considerably increased by the absence of the usual lamps hang-

ing from the ceilings. Lighting throughout the station is by means of fluorescent tubes.

The entire station is built below ground, and is approached from pavement level by three stairways at the crossing of Bethnal Green Road and Cambridge Heath Road. The booking hall, which is roughly circular in shape, offers the minimum of obstruction to free circulation, and the roof is supported by only two columns.

The booking office, together with its battery of automatic ticket machines, is centrally placed, and public telephones and a cloakroom are built flush into the side walls of the station.

The triple escalator is roofed with a white panelling material, mounted on bright metal ribs, which gives a more pleasing effect than the usual plain ceiling. This form of ceiling is also used for the

open space at the foot of the escalators between the platforms. The direction signs at top and bottom of the escalators are of black glass.

On the platforms themselves, the walls are finished in dark-cream tiling set off with flame-red and black banding. Tiles moulded with the heraldic devices of the Cities of London and Westminster and the Home Counties vary the wall surface. The station name is repeated on a continuous band along the platform side, and, as will be seen from the photograph reproduced on the left, the fluorescent lighting throws scarcely any shadow on the platform.

It is of interest to note that the new station at Bethnal Green, three illustrations of which are given on this page, was



*Looking down the triple escalator at Bethnal Green*

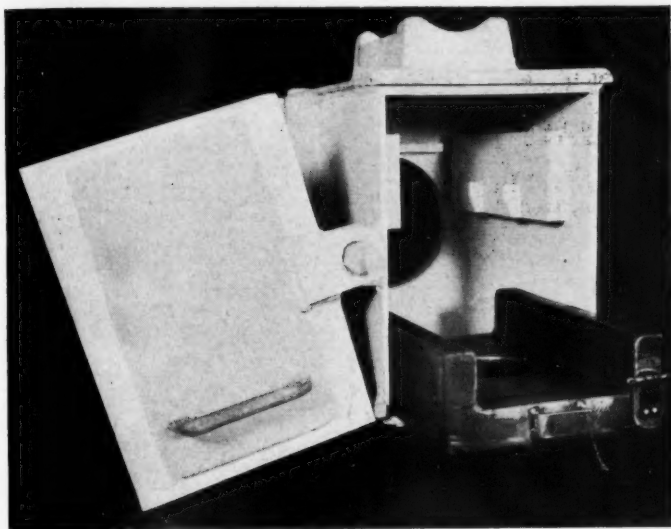
designed by L.P.T.B. architects and engineers, with the assistance of consulting engineers.



*Ample space at the foot of the escalator prevents congestion, and black-glass direction boards, prominently displayed, assist rapid dispersal of passengers during peak-hour traffic*

## L.M.S.R. Welded Axleboxes

*New design fabricated from steel plates achieves economy in manufacture and maintenance*



IN order to meet the heavy demand for wagon axleboxes, the L.M.S.R. has designed an axlebox fabricated from steel plates, as an alternative to the standard cast-iron and cast-steel plates. The axlebox, which takes the R.C.H. Standard bearing, liner, and lubricating pad, is of simple all-welded construction and economical both in manufacture and maintenance. It also lends itself to the use of simple jigs and flow production.

The sides and bottom of the axlebox are formed from rectangular mild-steel plates,  $\frac{1}{4}$  in. thick, having a back plate  $\frac{1}{2}$  in. thick, cut to such dimensions that, when assembled for welding, fillet welds are made without prior preparation. A hole is cut in the back plate to allow for the entry of the journal, and for the usual

movements which take place in service.

The top of the box, which has a recess for the bearing spring, is a drop stamping; the two axleguard grooves may be either drop-stamped or of rolled section. Two further stampings are welded inside the box, one on each side plate, the function of which is to retain the journal bearing and the liner (positioned between the bearing and the inside of the crown of the box) in their proper positions.

The lid, pressed from  $\frac{1}{4}$  in. steel plate, is dished to a depth of  $\frac{1}{4}$  in. to give reinforcement, the dished portion having a surround of some  $\frac{3}{8}$  in. to face up to the axlebox front. A lug is welded to one side of the lid and mates with a similar lug welded to one side plate of the box. It is held in position by a  $\frac{3}{8}$ -in. bolt

passed through both lugs, and kept tight by a coiled taper spring under slight compression, between the back of the lug on the box and the nut, behind which is placed a split pin in order to prevent the nut working loose.

A stop is welded under the bottom plate of the box to support the lid when closed; a further stop, located at the lug side, prevents the lid passing its fully open position when inspection is being carried out.

A pull and turn on the handle, which is welded to the lid front, allows easy manipulation of the lid for inspection of the axlebox interior. The liner seat and box front are machined, the machining of the front ensuring a good fit between the lid and the box.

### Loose Oil Container

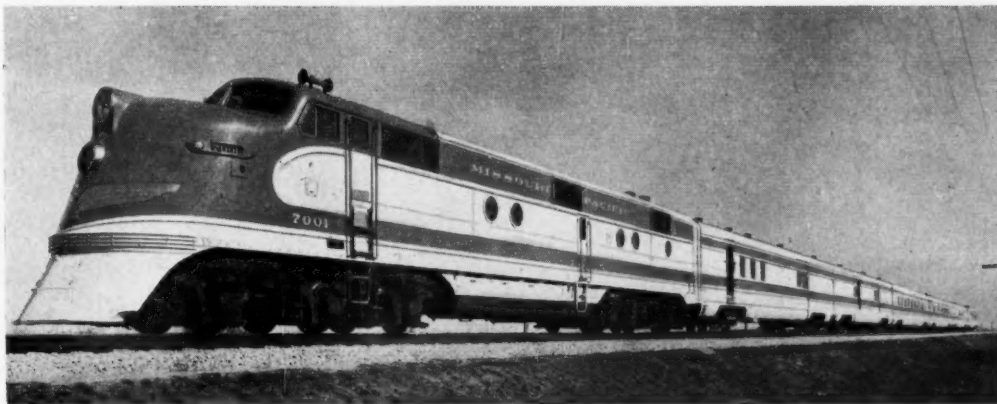
The use of a standard bearing and lubricating pad were objectives when the design was developed, and to enable the standard pad to be inserted readily or withdrawn for maintenance, a loose oil container is embodied, the container and pad being withdrawn together as necessary.

The oil container, which is made from 14 s.w. gauge steel sheet, and welded at the joints, incorporates the "ink well" diaphragm principle necessary to prevent loss of oil when wagons are discharged on rotary or end-tipping appliances.

As a further safeguard against loss of oil when tipped, the sides of the container are raised to provide sufficient capacity to retain all the oil at whatever angle the wagon is turned during discharge. To ensure continuous supply of oil, an oil-feed hole, similar to the type fitted to standard divided-type axleboxes, is incorporated, and located in such a position on the oil container that, should the feed-hole cover be left open in error, the closing of the axlebox lid will close it automatically.

Axleboxes of the design described are adaptable for any size of journals. Prototype axleboxes have been subjected to the severest shunting tests without damage; they can be used interchangeably with the standard types.

## A United States Diesel-Electric 2,000 b.h.p. Passenger Unit of the Electro-Motive "C-C" Type



*The fine lines of one of the modern American road diesels are clearly seen in this striking illustration. The train is the "Colorado Eagle" of the Missouri Pacific lines, on the St. Louis-Denver run*

### Removal of Cattle from Drought Areas in Australia



*Starving cattle from the drought areas of New South Wales being conveyed in open wagons to southern pastures (See Overseas paragraph on page 40)*

### New Parlour Cars, Canadian National Railways



*The first of 14 new vehicles, with rotatable seats and air conditioning*

## RAILWAY NEWS SECTION

## PERSONAL

Mr. P. A. Clews, European Manager, Canadian National Railways, is retiring on January 19.

Sir Charles Newton, M.Inst.T., Chief General Manager, London & North Eastern Railway, who has just relinquished the Chairmanship of the General Managers' Conference, Railway Clearing House, which he has held for 1946, entered the service of the Great Western Railway in 1897, and obtained experience in various

## L.N.E.R. APPOINTMENTS

Mr. F. C. Ley, Chief Clerk, Purchasing Agent's Department, to be Assistant to Traffic Stores Superintendent.

Dr. J. Sharp Grant to be Consulting Medical Officer for the whole Line, in addition to his existing duties as Medical Officer, Southern Area.

Mr. J. E. M. Roberts, Assistant Divisional General Manager, North Eastern Area, to be Passenger Manager, North Eastern Area.

Mr. R. H. Wright, Chief Officer, Marine Superintendent's Department, to be Assis-

Transport Act (N.I.), 1935, until March 31, 1947. Mr. Hanna has been appointed Chairman. The Ministry of Commerce has appointed Mr. C. J. Bateman to be Clerk to the Tribunal.

Sir Eustace Missenden, O.B.E., M.Inst.T., General Manager, Southern Railway, who has been elected Chairman of the General Managers' Conference, Railway Clearing House, for 1947, entered the service of the South Eastern Railway in 1899. After several years' experience in station working, he was transferred to



Elliot

Sir Charles Newton

Chief General Manager, L.N.E.R.; who has been Chairman, General Managers' Conference, for 1946



L &amp; Fry

Sir Eustace Missenden

General Manager, Southern Railway; elected Chairman, General Managers' Conference, for 1947

sections of the Chief Accountant's Office. He transferred to the former Great Eastern Railway in 1916, as Assistant to the Comptroller, and became, in 1919, Assistant Accountant, and, in 1922, Chief Accountant. On the formation of the L.N.E.R., Sir Charles Newton was appointed Assistant Accountant of the company; he became Chief Accountant in 1928, which position he held until the end of 1935, when he was appointed Divisional General Manager, Southern Area. He became Chief General Manager in 1939. He received the honour of knighthood in the King's Birthday Honours, 1943.

Sir Charles Bruce-Gardner has been appointed Chairman of John Lysaght Limited, in succession to Sir Samuel Beale, who had expressed a wish to relinquish that appointment, but retains his seat on the board. As recorded in our last week's issue, Sir Charles Bruce-Gardner has been released from his post of Chief Executive for Industrial Reconversion, Board of Trade.

tant to Marine Superintendent (Harwich Services).

Mr. W. D. Havelock, Head of Traffic Section, Divisional General Manager's Office, North Eastern Area, to be Temporary Assistant to the Divisional General Manager, North Eastern Area.

Mr. R. K. Kerr, Solicitor Assistant, Chief Legal Adviser's Department, to be Assistant Solicitor (Parliamentary).

Mr. S. Berry, Agent, New Cross, to be Goods Agent, Covent Garden, in succession to Mr. L. H. Pitcher.

We regret to record the death on December 27, at the age of 48, of Brigadier Kenneth Nugent Simner, O.B.E., formerly Director of Railways, Middle East Force, and of the North Western Railway (India).

The Governor of Northern Ireland has appointed Mr. George B. Hanna, K.C., Mr. H. E. A. Addy and Professor F. T. Lloyd-Dodd to constitute the Transport Appeal Tribunal for Northern Ireland for the purposes of the Road & Railways

the office of the Superintendent of the Line in 1906. In 1912 he was appointed Assistant to the District Superintendent, Eastern Division, and in 1914 was transferred as Assistant to the London District Traffic Superintendent. After acting as London District Superintendent during 1919, he was appointed London District Traffic Superintendent in 1920. On the grouping in 1923 he became London (East) Divisional Operating Superintendent, Southern Railway, and he was appointed Assistant Superintendent of Operation in 1930. In September, 1933, he was appointed Docks & Marine Manager. In October, 1936, he succeeded Mr. E. C. Cox as Traffic Manager, a position he continued to hold after he assumed, at the outbreak of war, the responsibilities of General Manager, in the absence of Mr. Gilbert S. Szlumper on Government service. Sir Eustace Missenden was appointed substantive General Manager as from April, 1942. He received the honour of knighthood in the King's Birthday Honours, 1944.



**Mr. W. B. G. Swayne**

Appointed Chief Inspecting Engineer,  
Sudan Government London Office

Mr. W. B. G. Swayne, who, as recorded in our issue of December 27 last, has been appointed Chief Inspecting Engineer, Sudan Government London Office, was born on November 16, 1902, and was educated at Haileybury College. He served an apprenticeship with Mather & Platt Limited, Park Works, Newton Heath, Manchester, from 1920-25, and from 1926-27 was Assistant Engineer, W. H. Allen, Sons & Co. Ltd., Queens Engineering Works, Bedford. In the latter year he was appointed Assistant Inspecting Engineer, Sudan Government, in London, and from 1932-46 has been Deputy Chief Inspecting Engineer. From 1941-45 Mr. Swayne acted as Liaison Officer between the Sudan Government and British Government departments in London.

Mr. J. Pendlebury, Assistant Secretary, and Mr. C. E. Hutchinson, M.B.E., Dock Railway Superintendent, Manchester Ship Canal Company, retired on December 31.

Mr. J. H. Scott, General Manager, Grand Canal Company, has been elected Chairman for 1947 of the Traffic Officers' Committee, Irish Railway Clearing House.

Mr. C. W. Richardson, formerly Chief Draughtsman, W. R. Sykes Interlocking Signal Co. Ltd., has been appointed principal assistant to the Chief Engineer, Mr. F. J. Sykes, with the title of Assistant Engineer. Mr. V. S. King has been appointed Chief Draughtsman in succession to Mr. Richardson and will act also as Signal Engineer to the company.

#### L.M.S.R. STAFF CHANGES

Mr. T. Bond, Stationmaster & Goods Agent, St. Albans (City), also in charge of St. Albans (Abbey) and St. Albans (L.N.E.R.), to be Stationmaster & Goods Agent, Tilbury (Riverside), also in charge of Tilbury Town & Grave-end, in place of Mr. R. A. Buckler, retiring.

Mr. R. Jackson, Stationmaster & Goods Agent, Preston Road, also in charge of Walton Junction, to be Stationmaster, Chorley, also in charge of Chorley R.O.F., in place of Mr. J. W. Wolfendale, promoted.

Mr. H. Blackburn, Stationmaster, Long-sight, to be Yardmaster, Rugby.



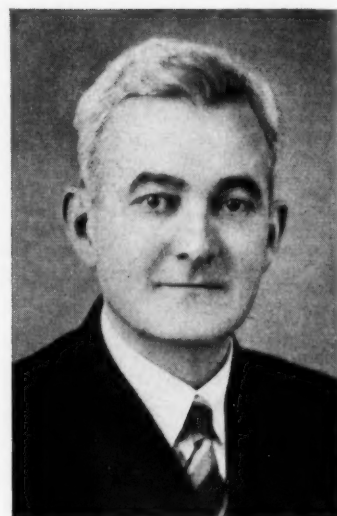
**The late Mr. W. S. Edwards**

Managing Director, W. G. Bagnall Limited,  
1932-46

Mr. William Sydney Edwards, M.I.Mech.E., M.I.Loco.E., whose death, at the age of 64, we recorded last week, was Managing Director of W. G. Bagnall Limited and of Cowlishaw Walker Engineering Co. Ltd. Mr. Edwards was born at Hanley, a son of the late Mr. William Edwards, F.R.C.O., for many years organist at Wellington Church, Hanley, and was educated at Hanley High School. He was apprenticed to the locomotive engineering industry in 1896 at the works of Kerr, Stuart & Company. In 1902 he joined W. G. Bagnall Limited as Chief Draughtsman. He eventually became General Manager, and, since 1932, had been Managing Director. He was a Vice-President of the Institution of Locomotive Engineers. Mr. Edwards was a prominent figure in engineering circles in Staffordshire. Since 1938 he had been President of the North Staffordshire Engineering Employers' Association; and he was Vice-President of the Birmingham, Wolverhampton & Stafford District Engineering & Allied Employers' Association, a member of the Midland Regional Committee of the Engineering and Allied Employers' National Federation, and a member of the council of that body. He was also a member of the general council of the North Staffordshire Chamber of Commerce.

Mr. H. G. McClean, M.I.E.E., M.I.Loco.E., is leaving for the United States at the end of January to take up an appointment in connection with diesel-electric traction with the Electro-Motive Division of General Motors Corporation at La Grange, Illinois.

Mr. G. J. Harris, M.Inst.T., Accountant, Northern Counties Committee, L.M.S.R., who, as recorded in our issue of October 11 last, has been appointed Assistant to the Chief Accountant, L.M.S.R., Watford, was born and educated in India. He joined the L.N.W.R. Accountant's Department at Euston in 1915, and from 1917 to 1919 served with the London Rifle Brigade. He returned to railway service, and, after a general experience in the Accountant's Department, he was transferred to the Office of the Controller of Finance & Statistics in 1930. He was appointed Senior Investi-



**Mr. G. J. Harris**

Appointed Assistant to Chief Accountant,  
L.M.S.R., Watford

gator, Executive Investigation Office, for back-checking of new works in 1935, and became Accountant, L.M.S.R., Northern Counties Committee, Belfast, in 1938. Mr. Harris was seconded to the Control Commission for Germany (British Element), Railways Branch, Transport Division, in August, 1945, as Chief Control Officer (Finance & Statistics); he has now returned on being appointed Assistant to Chief Accountant, L.M.S.R., Watford.

Mr. W. R. Jenkinson, M.B.E., for 18½ years in the L.N.E.R. Southern Area Passenger Manager's Department in charge of road transport arrangements, has retired.

We regret to record the death on January 3 of Mr. G. W. Wyles, Signal & Electrical Engineer, New Zealand Government Railways.

We regret to record the death, on December 25, of Mr. Sidney Roberts, who retired in 1943 from the position of District Goods Manager, Birmingham, L.M.S.R. Cremation took place at Perry Barr Crematorium on December 28, and the service was attended by many colleagues and trading friends.

#### PRESENTATION TO MR. A. L. CASTLEMAN

After a recent meeting of the Metropolitan Regional Road-Rail Committee the road side of the committee invited the rail side to a luncheon and took the opportunity of making a presentation to Mr. A. L. Castleman, a member of the committee since its inception, and many times Chairman of the rail side (including 1946). Mr. Castleman has just retired from the position of District Goods Manager, London, L.M.S.R. Mr. J. F. E. Pye, Chairman of the road side, expressed appreciation of the services Mr. Castleman had rendered to both the rail and road sides and regret that Mr. Castleman was leaving them on account of retirement. Mr. Castleman responded; and Mr. W. E. Blakey, London City Manager, L.N.E.R., a member of the committee, spoke on behalf of the rail side and paid tribute to Mr. Castleman. The committee welcomed Mr. E. Hunt as Mr. Castleman's successor as Chairman of the rail side.

**The New Year Honours List**

The following is a selection, further to that published in our last week's issue, of honours of transport and industrial interest from the New Year list:—

**C.B. (Civil Division)**

Mr. Hubert Edward Aldington, Chief Highway Engineer, Ministry of Transport.

**C.B. (Military Division)**

Brigadier (temporary) Charles Granville Barry Greaves, C.B.E., Royal Engineers.

**C.S.I.**

Mr. Stewart Ellis Lawrence West, C.I.E., O.B.E., V.D., Member, Transportation, Railway Board, India.

**K.C.I.E.**

Sir Bertie Staig, C.S.I., Indian Civil Service, Auditor-General of India. Former Financial Commissioner of Railways, India.

**C.I.E.**

Mr. Reginald de Vere Irwin, Chief Mechanical Engineer, Bengal Assam Railway.

**M.V.O. (Fifth Class)**

Mr. William Bertram Richards, Chief of Police, L.M.S.R.

**O.B.E. (Civil Division)**

Mr. Henry Norman Brock, Divisional Transportation Superintendent, Great Indian Peninsula Railway.

Mr. John Carson, J.P., Manager, Liverpool Repair Works, Harland & Wolff Limited.

Mr. James White Gibb, Director, Alkali Division, Imperial Chemical Industries Limited.

Mr. Richard Alan Hacking, M.Sc., lately Controller of Production, Dorman, Long & Co. Ltd. Recently appointed by Richard Thomas & Baldwins Limited to deal with, and advise on, iron and steel production, including construction and development.

Mr. James Hopwood, Chief Superintendent of Transportation, Rhodesia Railways.

**M.B.E. (Civil Division)**

Mr. Horace Aidley, Secretary, Railways Staff Conference.

Mr. Frederick James Clarke, Station Superintendent and Honorary Assistant Transportation Officer (retired), North-Western Railway, Delhi.

Mr. Ernest Crossley, District Locomotive Superintendent, Edge Hill, L.M.S.R.

Mr. William Orr Dowling, Assistant Manager, Engine Works, Harland & Wolff Limited, Belfast.

Mr. Alexander Robert Dunbar, Senior Assistant Superintendent, Southern Area, L.N.E.R.

Mr. Ernest David Fryer, Senior Executive Officer, Ministry of Transport.

Mr. Herbert William Hunt, Assistant Superintendent, Printing & Stationery, North Western Railway (India), and Honorary Secretary, Revnell Services Club, Lahore, Punjab.

Mr. Henry Edwin Kemp, Outdoor Carriage & Wagon Assistant, Southern Railway.

Mr. Patrick Mockler, lately Superintendent, Imperial Smelting Corporation Limited, Avonmouth.

Mr. Seward Noel Morgan, Assistant Manager, John I. Thornycroft & Co. Ltd., London.

Mr. William John Morison, Chief Engineer, Eastern National Omnibus Co. Ltd.

Mr. Peter Moore, Assistant Transportation Superintendent, Traffic, Madras & Southern Mahratta Railway.

Mr. Frederick Taylor Thompson, Goods Agent, Kenya & Uganda Railways & Harbours.

We regret to record the death on January 3, at the age of 84, of Mr. James Thomas Missenden, father of Sir Eustace Missenden, General Manager of the Southern Railway. Mr. J. T. Missenden joined the S.E.R. in 1883, and in due course became a Stationmaster, retiring in 1927 at Tunbridge Wells. He retained an active interest in the railway, and the town, of which he was a Councillor; and, in 1945, contributed to the success of an exhibition held in Tunbridge Wells to celebrate the centenary of the railway reaching there.

**G.W.R. STAFF CHANGES****Engineering Department**

Mr. P. S. A. Berridge to be Bridge Assistant, Chief Engineer's Office, Paddington, vice Mr. G. R. G. Sargent, Steelwork Assistant, retiring.

**Stores Department**

Mr. R. L. Bingham and Mr. W. H. Webb to be Assistants to Stores Superintendent, Swindon.

**Solicitor's Department**

Mr. R. G. Plowman to be Common Law Assistant to Solicitor, Paddington.

**The Derailment at Byfleet**

Below are given some extracts from letters which have been published in *The Times* on the Southern Railway accident at Byfleet on December 27:—

My wife and I were passengers on the 2.20 p.m. Bournemouth to London express which was derailed at Byfleet, Surrey . . . While the behaviour of the passengers was immaculate, and while the ambulance, police (both male and female), N.F.S., and the local inhabitants did everything possible to assist in the growing darkness, I feel—in common with every other passenger to whom I talked—that the behaviour of the local railway officials calls for the strongest comment. The accident took place at approximately 4.40 p.m., and from then up to about 7.30 p.m.—by which time I had been able to procure a taxi out from London—no announcement of any kind had been made as to any arrangements which the railway authorities proposed to make to get us to London. Passengers removed their luggage from the train as best they could, carrying it over the live rails from which we were never officially informed that the current had been disconnected—if indeed it ever was—and then wandered about asking each other if they had heard what the next step was to be. We appeared to be left to make our own arrangements if we were ever to leave Byfleet. I believe that some passengers left by train for Guildford some time after 7 p.m. and that many got away to different points by bus—but the officials remained completely inarticulate.

We all felt the strongest indignation at the way in which we had been treated. Surely some simple announcement as to the steps the Southern Railway officials proposed to take when relief measures became possible, however long it might take, would not have proved too difficult or have been too much to expect? It would certainly have relieved many minds and have averted the disgust we all felt. Though not previously a devotee of nationalisation, I feel that State ownership may produce something better in the way of efficiency of technique in similar circumstances—it certainly could not produce anything worse.

I am, Sir,  
NORMAN N. HEARSEY

9, The Embankment, S.W.3.  
December 29

While fully appreciating Mr. Hearsey's feelings after being in the derailed train and therefore understanding his criticism, it should be pointed out that the training of all railwaymen is such that in the event of any mishap their first thoughts immediately turn to preserving the safety of other trains and passengers. The derailment, at Byfleet, damaging the track

and destroying the signalling of the whole station, made it necessary immediately to prevent other trains from approaching the station and thus coming into collision with the derailed train. Electric current had to be inspected to see that it was switched off; medical aid had to be obtained for passengers who might be injured; junctions at which trains might be diverted to other routes had to be advised, and breakdown gangs and additional staff sent for.

As soon as these safety measures had been taken, arrangements were made to bring a relief train by specially improvised signalling to Byfleet in order to convey the passengers to Waterloo. It was then that the stationmaster and inspector moved among the 350 passengers informing them of the special relief train. It is, of course, quite possible that some of the passengers, including Mr. Hearsey, were either by that time making telephone calls or had left the station to continue their journey by other means. . . . Yours faithfully,

C. GRASEMAN

Public Relations Officer, Southern Railway

General Manager's Office,  
Waterloo Station, S.E.1.

January 1

Byfleet is a village with a small railway station and few staff. The very small number of men available were suddenly called upon to deal with a major crash in the station which blocked all up lines from Woking and deposited some hundreds of passengers all of whom . . . were anxious to get to London with the least delay.

I arrived at Byfleet Station shortly after 7 p.m. to find the majority of passengers in a relief train which had arrived and was awaiting a locomotive to take it to Waterloo. As all up lines were blocked and the electric power switched off the choice of route for this engine was naturally limited. An emergency bus service had also been organised, running from the station yard. There is no loud-speaker system at Byfleet . . . but my impression was that every one was conscious of the relief arrangements which had been made in the shortest possible time.

Rather than criticise, I should like to pay tribute to the magnificent work done by the Southern Railway staff, who, working unceasingly through Friday night to Monday morning, cleared the wrecked train, relaid the track, and re-opened the line to traffic with remarkable speed. . . . I trust that State ownership of railways will not mean that something better in crash technique will be required.

I am, Sir,  
RALPH HISCOX

Veryan, West Byfleet.  
January 1

## The Transport Bill

### Correspondence on road and rail competition

Below we reproduce some correspondence relating to the Transport Bill which has appeared in recent issues of *The Times*. An editorial comment on the correspondence is on page 35.

#### A RADICAL SOLUTION

I still get the impression from letters in your columns, and even from some of your own comments, that the strength of the case for the Government's Transport Nationalisation Bill is not yet fully understood.

The truth is that the history and basic economics of transport in Great Britain have long demanded some radical solution. So far from bringing forward a scheme out of the blue, the Government has produced an answer to an inescapable problem; and if this solution were not adopted, some other—in my opinion worse—would have to be found.

Two basic problems were thrown up by the history of British transport between the wars. The first arose from the fact that railway economics since the early nineteenth century have rested on the policy of subsidising the "low-grade" coal, steel and iron traffic at the expense of light luxury goods.

Road goods competition after 1918 blew this arrangement sky high, since the road haulers took the lighter traffic and left the railways with the dilemma of either going bankrupt, asking for a subsidy, or raising rates drastically on coal, &c., and thus throwing the country's economy and export trade out of gear.

This problem was never solved before the war, but was merely patched up by successive Acts of Parliament limiting road goods competition, which were only successful precisely in so far as they established physical unification under private ownership—an indefensible system. The railways put forward the square deal proposals just before the war, with the purpose of reaching agreement on rates with the road haulers, which must, of course, have meant a rise in rates for carrying either low-grade or light traffic, or both. After the war, the railways and road haulers proposed (last summer) a private agreement on rates, and implied that a Government subsidy for low-grade traffic might be necessary.

The second basic problem was the obvious need for physical road-rail unification in the case of both passengers and goods. It is easy to gibe at the words "unification," "co-ordination"; but those who do so are in danger of allowing their dislike of the word to divert their attention from a very real and important fact. Take one example. In Devon and Cornwall in the 1920s, there were a number of separate small bus companies, running often half empty, and to timetables which failed to make connections either with one another or the railways. By the late 1930s, the Western National and Southern National companies, owned and controlled by the Tilling combine and the railways jointly, ran well-filled buses, adjusted to traffic needs, and making connections with the railways at essential points. So over the rest of the country; and so also in road goods services, though in this case to a lesser degree.

This story proved that the basic economics of physical unification were so great as to bring about—in the absence of public supervision—a slide towards private monopoly. In London, an extreme ex-

ample of the general problem, public opinion insisted on unification of passenger traffic under public ownership; and greatly improved efficiency and convenience were the results.

While the underlying economic facts thus steadily forced a private monopoly system on the public, one independent expert inquiry after another investigated the problem, and all pointed to the same conclusion.

This conclusion was: (1) That competition was too uneconomic by reason of high overheads, duplications, &c., to be defensible or to survive; (2) that physical unification without unification of ownership was impracticable (as witness the Tilling-railway combine); and (3) that unification under private ownership was indefensible.

I quote only two of these independent authorities. *The Economist* of October 5, 1946, said:—"It is obvious that this principle of regarding transport as a whole, and the technical integration which follows it, can only be achieved by some form of unification of ownership." (See the whole of this excellent article.) And the Royal Commission on Transport, reporting in December, 1930, since when the basic problem has not altered, said:—"In any case, it is clear that any plan (for co-ordination) would necessitate a large amount of Government control, since otherwise the whole of the essential services of transport could be in the hands of a huge uncontrolled monopoly."

In short, the whole logic and economics of the problem, and the whole experience of 25 years, lead remorselessly to one solution: the unification under public ownership, which only political prejudice has hitherto resisted, and which the present Government now proposes. The problem cries for a solution; and what practical alternative is there? The railways and road haulers suggest a private agreement on rates, buttressed, apparently, by a Government subsidy; but Mr. Peter Thorneycroft repudiated this on behalf of the Conservative Party in the House last week.

Yours, &c.,

DOUGLAS JAY,

House of Commons,  
December 26

#### INDEPENDENCE OF SMALL OPERATORS

Mr. Jay's letter on the nationalisation of transport rests, in part, upon a commonly held, but unproved assumption about the relationship between railway costs and charges and upon an analysis of the road passenger business which, although just, is hardly relevant to the discussion of a Bill primarily concerned with the carriage of goods.

Low-grade commodities such as coal and steel are, it is true, carried at much lower rates than the more expensive goods. But, as Mr. Jay is well aware, it costs far less to haul a ton of coal than a ton of furniture.

The profit or otherwise earned upon a traffic depends not only upon the rate, but also upon the costs of conveyance and upon the tonnage offered. No analysis of costs has ever been published (so far as I know) from which the contribution made by each class of goods to the general expenses of the line could be ascertained. A public inquiry might have elicited the facts, but in the absence of statistics of revenues and costs in the particular instances, Mr. Jay's point that the carriage

of low-grade goods is "subsidised" at the expense of the lighter must remain an interesting, but, at the same time, unverifiable hypothesis.

Certainly it is not one which should be called in support of so immense an experiment in economic organisation. There is no provision of the law (unless the derogating clauses of the Local Government Act of 1929 are relied on) which requires railway companies to carry the cheaper staples at unremunerative rates; and the Railway Rates Tribunal, upon applications for exceptional rates, has always conceived itself bound to allow those which appeared likely to improve railway net revenue and to withhold consent from those which did not, regardless of the class of merchandise in question.

The original case for nationalisation depended upon an alleged propensity for industry to become progressively less competitive and more and more highly organised in larger and larger private concerns. This is true of the railways and of certain sections of the road passenger business. But it is certainly not true of the road haulers.

In spite of restriction of entry, a steady propaganda in favour of consolidation and one or two determined attempts at combination, the transport of goods by road remains predominantly in the hands of the small man and is likely to remain so. The larger haulers, indeed, have often had cause to complain that, owing to the jealous independence of the mass of small operators, no group in the business has ever been able to negotiate with railway companies, traders, or Government departments with any hope that their recommendations, however reasonable, would bind the body of haulers as a whole.

Mr. Jay claims that logic and economics lead remorselessly to unification under public ownership as the only solution to the transport problem. Now, unification, whatever its other advantages may be, is inseparable from organisation on a very large scale and that may involve centralisation.

My inquiries before the war, made among traders, road haulers, railway servants, and Government officials, convinced me that small scale was the main source of the benefit which traders have enjoyed from road motor competition. That gain ought to be preserved under the new dispensation; but there is serious danger that it will be lost unless nationalisation can be combined with a decentralisation of control almost equivalent to the present widespread distribution of ownership among road carriers of goods.

I am, Sir, yours faithfully,

GILBERT WALKER.

Reader in Economics,  
University of Birmingham

Edgbaston, Birmingham 15,  
December 28

#### RESULTS OF TWO INQUIRIES

Mr. Douglas Jay must be a master of under-statement, since he still gets the impression "that the strength of the case for the Government's Transport Nationalisation Bill is not yet fully understood." What a truly remarkable description of the storm of nation-wide criticism that has been aroused by this ill-conceived measure!

But it is good that Mr. Jay should now expound the reasons which have led the Government to produce its proposals. It is, however, a pity that the Government did not see fit to issue, in advance of the Bill, a White Paper; since informed criticism of some of the fundamental misconceptions which afflict the Minister of

Transport might then have helped to produce a better Bill.

Dealing with road-rail competition before the war, Mr. Jay comments that "the successive Acts of Parliament limiting road goods competition" (he presumably means the Road & Rail Traffic Act of 1933) "were only successful precisely in so far as they established physical unification under private ownership—an indefensible system."

But, in point of fact, very little consolidation of road haulage undertakings took place following that Act. All that happened was that before licences for additional vehicles could be obtained, it became necessary to show proof of need for the services to be offered.

Mr. Jay then states that there is an obvious need for physical road-rail unification in the case of both passengers and goods.

He supports this argument by adducing the great improvement in facilities offered to the public through the co-ordination and amalgamation of bus companies in Devon and Cornwall, where the amalgamated concerns, "owned and controlled by the Tilling combine and the railways jointly, ran well-filled buses, adjusted to traffic needs, and making connections with the railways at essential points." This, incidentally, is the very system of unification under private ownership which he describes as "indefensible."

There are, of course, two questions at issue—State or private enterprise, and large or small units. Mr. Jay ignores the fact that the optimum unit of management for bus undertakings may be very different from that for goods haulage. Passenger services are based on regular services, a fairly steady routine demand, and a fixed fare tariff.

Freight transport involves countless different types of service, fluctuating from day to day, and carried at thousands of separate rates, each adjusted to the circumstances of the individual job. In this case, a small unit of management may often be the most efficient, and Mr. Jay's attempt to draw a moral for freight transport from bus operation is thus misplaced.

Finally, it is almost incredible that Mr. Jay should claim that "one independent expert inquiry after another investigated the problem and all pointed to the same conclusion," i.e., to the direct unification of transport in the form of a gigantic State monopoly.

What are the facts? The Royal Commission on Transport in 1931 "found it impossible as a commission to make any definite recommendations" (for unification). In 1937, the Transport Advisory Council reported that "the best line of approach to achieve co-ordination is to aim at securing for traders adequate alternative facilities, care being taken that the resultant competition is on fair terms"; and that "any attempt to dictate services and to endeavour to decide that certain goods should go by certain forms of transport would be impracticable."

The recent road-rail proposals provide for fullest co-ordination on fair terms, and at the same time preserve to the traders the right to select their own form of transport, including the unfettered use of their own vehicles for the conveyance of their own goods—provisions which are denied to them under the Government plan. The Government has, in fact, decided to ignore the opinions of the experts and to go its own way.

Supporters of the Bill such as Mr. Jay do not help matters when they betray

such ignorance of the recent history and the economic background of the transport industry.

Yours faithfully,

H. T. DUTFIELD  
Chairman,  
Road Haulage Association

C. H. NEWTON  
General Managers' Conference,  
Railway Clearing House

December 31

#### MR. DOUGLAS JAY'S REPLY

In their reply to my letter, Mr. Dutfield, of the Road Haulage Association, and Sir Charles Newton, of the Railway Managers' Conference, though they write with gusto, do not, if I may say so, improve their case. I note they do not challenge my suggestion that their own "road-rail agreement" of last summer implied the need for a Government subsidy, and I take it this is agreed.

Instead, they first dispute my contention that curtailment of competition—i.e., physical unification under private ownership—followed the Road Traffic Acts of the 1930s. But the fact is that after the 1933 Act, any would-be road haulier had to prove "need" before a licensing authority, at which the big railway and road interests frequently opposed with the help of much legal apparatus. As a result, a privileged class of licence-holders was created whose profits were naturally larger than they would have been if no licensing system had existed.

The process has now gone further, and the Road-Rail Central Conference (of which Mr. Dutfield's and Sir C. Newton's organisations are sponsors) has organised local "licensing sub-committees" before which applicants are "invited" to attend before approaching the official authorities. Some applicants believe this to be the official inquiry, and I have had several protests from small men in my constituency about this, of which I quote one: "In my opinion this is a clumsy attempt on the part of the Road Haulage Association to adopt the closed-shop policy in the interests of its members, who are largely employers. It is because I have studied over 12 years the tendency to organise a monopoly of inland transport that I am an ardent believer in State ownership, direction, and control."

Mr. Dutfield and Sir C. Newton can hardly be ignorant of this arrangement, and if they are not, to deny that it tends to limit competition would surely be an odd use of words. Anyway, though I understand the Minister has not felt able to prohibit it, it is questionable; and the fact that the Government's straightforward proposals for unification under public ownership will bring it to an end, is not the least argument for those proposals.

Secondly, your correspondents question my statement that numerous expert authorities have "pointed to the conclusion" of such unification. For brevity's sake, I gave only two quotations in my earlier letter, and add only two now. The Royal Commission on Transport of 1930-31 said: "It appears to us that without unification—however it may be accomplished—no attempt to bring about complete co-ordination would be successful." And *The Financial Times* of September 2, 1946: "The proper goal now for British transport should be complete co-ordination"; and "complete co-ordination can only be undertaken by some central unified body, interpreting national policy, with mandatory powers."

Finally, Mr. Dutfield and Sir C. Newton say that "a small unit of management" is

often very efficient in road goods transport, and Mr. Gilbert Walker agrees. Of course. That is the principle of the Government's Bill, which is mainly a scheme for the nationalisation of long-distance transport. That is why freedom is left to the "A" and "B" licensees within 25 miles radius, and the "C" licensees within 40 miles radius, with elasticity to go beyond. I am glad that we are all broadly agreed on this point also.

Yours, etc.,

DOUGLAS JAY

House of Commons, January 2

#### JOINT NEGOTIATING SUB-COMMITTEES

Mr. Douglas Jay's continued advocacy of the Transport Bill suffers from the fact that it is based on observation of the transport situation from the outside rather than upon inside experience.

Mr. Jay claims that in our earlier letter we did not challenge his statement that the need for a Government subsidy is implied in the Road-Rail agreement on co-ordination. We accordingly take this opportunity of denying the suggestion in the most emphatic terms. Nowhere in the Road-Rail agreement is a Government subsidy suggested, directly or by implication.

He is also wrong in thinking that the licensing system established under the Road & Rail Traffic Act of 1933 abolished, or even seriously reduced, competition in the road haulage industry. The only form of competition which it did restrict was that from possible new entrants into the industry intending to operate over routes already covered. The competition between the existing firms of hauliers, and also between the hauliers and the railways, remained as keen as ever. The main point at issue, however, was that of growth in size; here Mr. Jay makes the mistake of assuming that any growth in size would necessarily be tantamount to establishing monopoly.

The licensing procedure was suspended during the war, but, with its reintroduction, the railway companies and the Road Haulage Association brought into being the joint negotiating sub-committees to which Mr. Jay refers.

This scheme is designed to promote co-ordination between road and rail transport, and to bring about a substantial reduction in the number of objections lodged with licensing authorities, and to remove once and for all the bitterness engendered by hard-fought disputes in the courts.

The scheme is entirely voluntary; it in no way limits the discretion of the licensing authorities; and it has already proved itself to be successful in practice. Before being brought into operation the scheme was submitted in detail to the present Minister of Transport, who saw no objection in principle to it, and himself brought it to the notice of the licensing authorities.

Mr. Jay makes the extraordinary claim that the Government has recognised that a small unit of management may be efficient for road goods transport because the Bill leaves the short-distance hauler independent. There is a missing link in this reasoning. The implication is that the small hauler carries over short distances, whereas the large firm carries over long distances. This, however, is not borne out by the facts.

In his first letter, Mr. Jay said that "one independent expert inquiry after another investigated the problem and all pointed to the same conclusion." So far as we are aware, only two bodies completely fulfil

his definition—the Royal Commission on Transport and the Transport Advisory Council—whose final conclusions were summarised in our earlier letter; they were unfavourable to the present Government's plan. How then can the Government pretend it is proceeding to the logical conclusion indicated by the "experts"?

The only comment the Minister made on the detailed scheme for road and rail co-ordination submitted to him in July last was that "the Government has other plans." We accordingly awaited with interest the unfolding of the "other plans." The Transport Bill has come, and it is painfully obvious that it contains no plans whatever—nothing but a grandiose hierarchy of committees whose functions are vague in the extreme.—Yours faithfully,

H. T. DUFFIELD,  
Chairman, R.H.A.

C. H. NEWTON,  
Chief General Manager, L.N.E.R.

January 6

#### CENTRALISATION AND COMPETITION

Mr. Jay, I think, misunderstood my last paragraph. The advantages of decentralisation are just as marked in long-distance haulage as within the short distance area which will be left free.

Centralisation, probably an inevitable characteristic of railways, however they may be owned, was, in my opinion, chief among the disabilities under which the railways laboured in competition with long distance haulers before the war. The commercial efficiency of the Transport Commission's services will certainly suffer if the Road Transport Executive cannot or does not try to prevent the centralisation of its long-distance haulage services once they have been acquired.

The road transport business, though restricted by the Act of 1933, has none the less remained competitive. Once again, it would have assisted discussion if Mr. Jay had produced the evidence for his statement that licence holders earned profits "naturally larger than they would have been if no licensing system had existed." His conclusion is a commonplace of elementary economics, but the saving phrase of the text-book "other things being equal" can hardly be assumed without examination in the case of a particular trade. Road haulers, I agree, were certainly not doing as badly before the war as they liked to claim, but it was always my impression that by 1939 restriction of licences, at any rate in the long-distance trade, had not sensibly reduced the vigour of competition between licence holders.

I am no advocate of restriction, as Mr. Jay will see if he does me the honour of reading my studies of the economic consequences of the Act of 1933, and I fully support him in his opposition to the activities of the self-appointed local "licensing sub-committees." But it surely does not need so large a hammer as nationalisation to crack that particular nut.

The licensing authorities have full power in their discretion to grant or refuse licences. The Tribunal and licensing authorities between them could effectively prevent this unwelcome attempt unduly to limit competition simply by pointing out on hearing applications for new licences, that little or no weight would be given to objections supported by these or similar organisations, and they might rest themselves upon an older doctrine of the common law—that of conspiracy in restraint of trade.—I am, Sir,

GILBERT WALKER,  
Reader in Economics

University of Birmingham  
January 3

## Ministry of Transport: Accident Report

*Balmuckety Crossing, L.M.S.R., July 25, 1946*

Colonel A. C. Trench, assisted by Mr. C. S. Macdougall, a Certifying Officer (Road Vehicles), Scotland Area, inquired into the accident which occurred at 5.11 p.m. on July 25, 1946, at Balmuckety Crossing, on the Forfar-Kirriemuir single-line branch, L.M.S.R., when the 5.8 p.m. passenger train from Kirriemuir, consisting of 3 bogie coaches drawn by 0-4-4 tank engine No. 15190, bunker leading, and travelling at about 15 m.p.h., struck and wrecked completely a bus which had burst the gates and stopped on the line. A stout fence led to the bus being dragged along and crushed. Of the 24 passengers, only 2 escaped uninjured; 14 were taken to hospital, where 3 died, and 7 were killed outright. No person on the train was injured. The weather was fine and dry. Assistance was obtained quickly and all the injured had been removed by 6 p.m.

#### CIRCUMSTANCES OF THE CASE

The road approaches the crossing through a cutting, and the gates become visible to a driver at about 220 yd., whence the road is practically straight. The gradient is falling to a point about 60 yd. from the crossing, then about level. There is a falling gradient on the railway, and the crossing comes into view at about 350 yd. Intervisibility between train and road vehicle extends about 150 yd. along both road and railway. The gates are worked by a crossing keeper and protected by distant signals controlled by key interlocking. There is telephone communication and a bell, set ringing by a treadle 1,542 yd. in rear of the crossing and silenced by another treadle at the crossing.

From the time warning is received, and assuming no road traffic is approaching, it takes about 60 sec. to close and bolt the gates and clear the distant signal. The gates, renewed in November, 1945, had been treated with creosote and were dark in colour. Each main gate has a red diamond target and lamp arranged to swivel. Permission has been obtained for the gates to stand normally across the line. There are no trains between 7 p.m. and 6 a.m., or on Sundays.

The gatekeeper received the warning bell signal, and, closing the gates in the regular manner, saw no vehicle approaching. He freed and lowered the distant signal. Looking round for a moment, he noticed the bus approaching, and shortly after was struck by a portion of the gate. The train driver found the distant signal off and saw the bus approaching. He assumed it would stop, but thinking at last, that it would not, he applied the brakes and endeavoured to reverse. This evidence was confirmed by the guard.

A separate inquiry was held under Section 23 of the Road Traffic Act, 1930, and a report made by Mr. R. A. Lovell, an Engineering Inspector, Highways (Engineering) Division, Ministry of Transport, dealing with the condition of the bus and the equipment available for repairs and maintenance at the owners' premises.

There was no system of organised inspection or arrangement for the driver to make any written reports on the condition of the vehicles. It was stated that the bus brakes had been examined and adjusted in April, when the linings were found to be good and of adequate thickness. From that date until the accident the vehicle had operated 200 to 300 miles a week, and on the Sunday

before was found to have all brakes working properly. With 10 passengers, the hand brake held it on a steep slope. On the day of the accident the driver found no fault with the brakes until coming in sight of the crossing, with which he was quite familiar. He depressed the foot pedal to the floorboard, but it had no braking effect, and, pulling hard on the hand-brake lever, he heard a click and found that also useless. By changing down to second gear he reduced speed to about 5 m.p.h., at which speed the bus went through the gates. The handbrake had been used for parking purposes on the outward journey and the footbrake functioned, it was asserted, on leaving Kirriemuir.

Inability to stop arose either from an error of judgment or failure of one or both means of braking. Mr. Lovell considered the nature of certain repairs and adjustments made to the brake gear, in the light of the examination made of the damaged vehicle and evidence given by the proprietor and driver. He concluded that a wrong type of bolt had been used to connect the footbrake rod and pedal and that the rod became detached some time after leaving Kirriemuir, either by fracture of the bolt or nuts working loose.

The foot pedal would have been kept up by the pull-off spring. It was possible that the handbrake rod had been bent by pressure of the lever against the end of the rod protruding through the body of the front clevis, causing fatigue and failure under the driver's emergency efforts. The rod also could have been fractured by being struck by the whirling of the front universal coupling, when its bolts—which three were found broken—failed.

Probably, however, the coupling did not break until the crash occurred, in view of the driver's statements about reducing speed. The maintenance of the vehicle had been neglected and it was not fit to carry passengers. It had worn-out brake linings, and oil and grease on the drums indicated faulty oil seals. There was evidence of unworkmanlike repairs, and it was probable that the vehicle had been operating with a broken front-brake cable.

#### INSPECTING OFFICER'S CONCLUSION

There can be no suggestion that the bus driver did not have sufficient warning to enable him to stop clear of the gates. No criticism can be made of the protective arrangements provided by the railway, nor of the action taken by its staff. The circumstances leading to loss of control of the bus were investigated in the separate inquiry.

#### RECOMMENDATIONS AND REMARKS

Although they had no bearing on this particular accident, Colonel Trench considered that two points brought up at his inquiry should receive consideration.

(1) The gates, coated with preservative stain, although quite clearly visible from a distance, would be much more conspicuous if painted white or a light colour. When the paint shortage is eased, this should be arranged for.

(2) There were no warning notices on the road. Although this could not be called an urgent case, in view of the good range of vision and the fact that the gates are seldom across the road after dark, such notices appeared desirable and have been provided since.

## Dispute at Stratford Depot, L.N.E.R.

Members of the workshop staff at Stratford locomotive depot, L.N.E.R., presented a local claim to the company for payments additional to their time rates on November 7, 1946. The company informed the men's representatives that the issues involved required careful examination, and a definite reply could not be given until thorough investigations had been made.

On November 22, the company received a communication from the representatives of the shop staff, stating that an embargo on overtime, including Sunday duty, for the men concerned, would begin on November 25, and that the men would "work to rule." As a result, various cancellations of train services have been necessary, as has been recorded in our news pages.

After the company had sent various communications to the headquarters of the Amalgamated Engineering Union, a meeting took place between the Assistant General Manager (Staff) of the L.N.E.R., and Mr. J. R. Scott, of the union, on January 1, after which the L.N.E.R. stated that the union had undertaken to try to obtain a resumption of normal working. This statement was criticised in a letter from Mr. Scott to the Assistant General Manager (Staff) on the grounds that it had been issued without full consultation with the other side.

A further statement was issued by the L.N.E.R. on January 4, summarising the course of the negotiations from the beginning of the dispute. This statement is given below.

### L.N.E.R. STATEMENT

The L.N.E.R. desires to express its deep regret for the inconvenience and discomfort which suburban travellers to and from Liverpool Street and Fenchurch Street have had to endure since the beginning of December owing to numerous daily train service cancellations. As is well known, these cancellations have been caused by an acute shortage of locomotive power brought about by a dispute between the L.N.E.R. and mechanics at Stratford locomotive depot. In view of a statement which recently has been made to the Press by an official of the Amalgamated Engineering Union, the L.N.E.R. feels that its position should be made quite clear, by placing before the public the history of the events which led to the present situation.

On November 4, 1946, representatives of the workshop staff employed at Stratford locomotive depot applied to the company's local officials for a meeting to discuss a local claim. This meeting was held on November 7, and a claim was submitted that certain of the workshop staff employed at the depot should be paid the average earnings of the staff in the main production shops. A section of the staff, however, dissociated themselves from this application on the grounds that a local claim was not in order, and that the question of increased payments to the whole of the workshop staff should be put to the headquarters of the trade unions concerned for negotiating with the company.

On November 18, the representatives of the staff at the depot were given a verbal reply (subsequently confirmed in writing) that their application for payments additional to their time rates raised very wide issues, which would require careful investigation, and it was not possible to give a definite reply until the matter had been

examined thoroughly. The men are, in the meantime, being paid in accordance with the national agreements between the railway companies and the unions.

On November 22, the shop staff representative handed the company's local official a communication which stated that in view of the unsatisfactory reply which they had received, an embargo on all overtime, including Sunday duty by the men covered by the application, would take place on and from November 25, 1946. The men also stated that they would "work to rule."

A letter was sent on November 26 by the Chief General Manager of the L.N.E.R. to the headquarters of the Amalgamated Engineering Union, in which the company reiterated that the men's application was receiving consideration and asked the union to take the necessary steps to ensure normal working at Stratford. On November 29, the Union replied that the matter was receiving attention. A further letter was sent to the union on December 4, pointing out that there had been no change in the position and asking them to persuade the staff to work normally. On December 9, the union wrote to the company that they were awaiting a reply from their London District Secretary, whom they had asked to investigate the matter.

As there was no improvement in the position, a further letter was sent on December 11 informing the union that the application was not one which could be considered from the point of view of Stratford depot alone, but that the company had the general question actively in hand. The union was informed also that the matter would be dealt with as quickly as possible, and that the men would be given a reply as soon as the investigations were complete. The union was pressed to arrange that normal working was resumed without delay.

Various telephone conversations took place between the headquarters of the company and the headquarters of the union. Great difficulty was experienced in contacting any official of the union who was in a position to give any definite information.

A letter dated December 7 was received by the company from the headquarters of the Amalgamated Engineering Union in which it was stated that they had a conversation with their London North District and they were contacting the men concerned in an endeavour to resume normal working. Following this letter, repeated telephone inquiries were made by the headquarters of the company, but the only information which could be obtained was that the question would be considered by the Executive Council of the Union at a meeting to be held on December 23. The union did not advise the company of the result of the meeting of the Executive Council on December 23, and during the Christmas week no contact could be made with responsible officials of the union. Every inquiry was met by the statement that the official dealing with the matter was not available.

An Amalgamated Engineering Union official got in touch with the headquarters of the company in the late afternoon of December 31. The company immediately suggested a discussion, and this took place on the following morning, January 1, between the Assistant General Manager (Staff) of the L.N.E.R. (accompanied by the Locomotive Running Superintendent of the area concerned) and Mr. Scott of the Amalgamated Engineering Union. At this

meeting, the serious situation which had arisen as a result of the men's irregular action was impressed upon the trade union representative, as well as the immediate necessity for bringing about a resumption of normal working.

Mr. Scott undertook to meet the men at Stratford as quickly as possible, and it was clearly understood that this approach was in furtherance of the steps which the Amalgamated Engineering Union had already indicated they were taking to bring about a resumption of normal working.

## Entre Rios Railways Co. Ltd.

The annual general meeting of the Entre Rios Railways Co. Ltd. was held in London on December 9, Mr. B. H. Binder, Chairman of the company, presiding.

The Chairman, in moving the adoption of the report and accounts, said that the gross receipts of the railway again reached a high level—namely, ps. 22,103,745—an increase of ps. 1,216,028, or 5·8 per cent., over those of the previous year, despite unfavourable weather conditions and the ravages of locusts affecting the cereal and other crops in Entre Rios. The receipts were favourably influenced by the absence of road competition and by the interruption to river traffic caused by the low level of the River Parana during the first half of the financial year.

Passenger traffic was heavy, and the number carried increased by 25 per cent., but the important livestock traffic declined by 17 per cent. owing to drought and locusts affecting the camps, and to the labour troubles in the frigorificos. Working expenses were higher by ps. 1,351,874, owing chiefly to increases in wages which their company and the other railways had to grant. They were faced with the prospect of further increases in wages and in the cost of working conditions in the near future.

The fuel situation had improved to some extent as more coal and oil had been available, which was fortunate as the production of firewood, largely used during recent years, fell off to an alarming extent. The use of coal and oil had the advantage of releasing for public service a large number of wagons formerly employed in obtaining firewood. Unfortunately, further shipments of coal from the United States might be affected for a time by the recent strike there.

The net receipts of ps. 4,478,182 converted at appropriate rates of exchange represented £273,864, a small decrease of 1·5 per cent. compared with the figure of £278,142 for the previous year. The company had continued to pay the interest on the 4 per cent. debenture stock regularly on the due dates, and, in addition, had paid, since the issue of the last report, one and a half years' arrears of interest on the 5 per cent. debentures, amounting, with the 5 per cent. interest thereon, to £81,170, and bringing up these payments to November 30, 1935. The debenture holders' committee had extended the debenture interest moratorium until June 30, 1947, under the power granted by the scheme of arrangement.

A cable from the General Manager stated that wheat and linseed crops had suffered considerable damage from locusts and excessive rainfall, but increased area sown might compensate. Maize, rice, citrus groves, livestock, and grazing camps were in good condition. Heavy tonnages of all classes of merchandise were awaiting transport.

The report was adopted.

## Notes and News

**Birkenhead Railway Dividend.**—It is announced by the L.M.S.R. that a balance of the stocks of the Birkenhead Railway will be struck at the close of business on January 11, in order to prepare the warrants for the dividend payable on January 21. Only proprietors then registered on the books will be entitled to the forthcoming dividend.

**Leopoldina Locomotive Order for U.S.A.**—An order for eight steam locomotives of the 2-8-2 type has been received by the Baldwin Locomotive Works, Philadelphia, from the Leopoldina Railway. The engines will cost slightly more than \$500,000 (£125,000), and are due to be shipped next summer. They will be used for goods traffic.

**Chief Staff Officer Required.**—A chief staff officer is required by the Government of Palestine for the railway department for two tours of 18 to 24 months with prospect of permanency. Candidates, aged 40 to 45, must have a high standard of education and have had wide experience in staff administration. See Official Notices on page 59.

**London & North Eastern Railway Appointment Vacancy.**—A permanent way assistant to engineer, London, is required by the L.N.E.R. Applicants should not be more than 50 years of age, must be a member, or associate member, of the Institution of Civil Engineers, and have expert knowledge of matters concerning railway permanent way, maintenance, and design, including point and crossing work. See Official Notices on page 59.

**Works Superintendent Required.**—A works superintendent between 35 and 40 years of age is required by the Palestine Railways. Applicants must have served a regular apprenticeship in a British railway workshop or locomotive building establishment, followed by not less than two years in a locomotive drawing office, and have held a post equivalent to assistant works manager or superintendent in a British railway workshop or locomotive building establishment for not less than three years. See Official Notices on page 59.

**G.W.R. Passenger Train Suspensions.**—The following G.W.R. main-line and cross-country expresses were suspended as from Monday, January 6:—

Up and down "Torbay Express" (12 noon from Paddington; 11.25 a.m. from Kingswear)  
7.50 a.m. Birmingham to Bristol  
2.15 p.m. Bristol to Birmingham  
11.10 a.m. Wolverhampton to Weymouth  
10.30 a.m. Weymouth to Wolverhampton

In addition, some 60 weekday and 13 Sunday local services throughout the system were suspended on the same date. This step has become necessary in order to provide additional locomotives for the working of freight trains, and also to conserve coal.

**Restriction on Freight Wagon Building in U.S.A.**—Builders of freight wagons have been restricted in the use of steel for export business in order to conserve material for the production of wagons for home use. The Office of Temporary Control (the recently-created liquidating agency for the Office of Price Administration, the Civilian Production Administration, and other Government bodies) has ruled that no freight wagon builder shall place any order for steel to be used in the production of wagons for export unless

written authorisation has been obtained from the agency.

**Permanent Way Institution Dinner.**—The annual dinner of the Permanent Way Institution will be held at the Abercorn Rooms, Great Eastern Hotel, Liverpool Street Station, E.C.2, on Saturday, January 18, at 6.15 for 6.30 p.m.

**Agreed Charges.**—Applications for the approval of 61 further agreed charges under the provisions of section 37 of the Road & Rail Traffic Act, 1933, have been lodged with the Railway Rates Tribunal. Notices of objection must be filed on or before January 14 next.

**More L.M.S.R. Restaurant Cars.**—The L.M.S.R. announces that restaurant cars were restored on the following weekday trains on January 6: 7.15 a.m., Sheffield to St. Pancras; 2 p.m., St. Pancras to Bradford (restaurant car as between St. Pancras and Sheffield); 6.40 a.m., Perth to Inverness; and 4.30 p.m., Inverness to Euston (between Inverness and Perth).

**Proprietors of Hay's Wharf Limited.**—After providing for taxation, the net profit for the year ended June 30, 1946, was £141,790, compared with £138,167 in 1944-45. The carry-forward of £208,374 compares with £193,519 in the previous year. The final distribution of 7 per cent. on the ordinary shares brings the total dividend for the year to 10 per cent., as in 1944-45.

**L.N.E.R. Train Service Reductions.**—In order to provide additional locomotives for working freight trains, and also to conserve coal, the L.N.E.R. withdrew four main-line and over 100 local and provincial trains throughout the system on January 6. The main-line trains concerned are: 9.15 a.m., Kings Cross to Newcastle; 12.15 p.m., Newcastle to Kings Cross; 10.45 p.m., York to Edinburgh; and 12.50 p.m., Edinburgh to Newcastle.

**Collision at Gidea Park, L.N.E.R.**—On January 2, the 10.25 p.m. mail train from Liverpool Street to Peterborough (via Ipswich and Haughley) collided in dense fog with the rear of the 10.28 p.m. passenger train from Liverpool Street to Southend, which was just moving out of Gidea Park Station. The two rear coaches of the Southend train were smashed, but the whole of the Peterborough train remained on the rails. Five passengers in the Southend train were killed, and two died later in hospital. The driver and fireman of the mail train, and the guard of the Southend train, who jumped clear, escaped injury. A large number of passengers received injuries and 35 were detained in hospital.

**Sir Ronald Matthews Replies to "Slur on Railways."**—Sir Ronald Matthews, Chairman of the L.N.E.R., described Mr. Dalton's remarks on British railways during the Transport Bill debate as "an unwarranted slur," when addressing the Hull Timber Trade Luncheon Club on January 3. Describing the company's development plans for Hull, Sir Ronald Matthews said that what they had done and proposed to do showed a spirit of enterprise which did not merit in any way the disparaging and ill-mannered references to the managements and staffs of the main-line companies made by the Chancellor, who elected to tell the world that the British railways were a disgrace to the country. He suggested that if the railways were a disgrace to the country now, it was nothing to do with the railway managements. This sort of stuff was cheap

and nasty demagoguery, used to cover the poverty of the argument for nationalisation. Nor was it very honest, for the Chancellor omitted to mention the enormous sums for deferred maintenance and abnormal wear and tear which the railways had at their disposal to spend as soon as conditions and Mr. Dalton's Cabinet colleagues permit.

**Curtailment of Train Services in France.**—As a result of the coal shortage, numerous passenger services have been discontinued.

## British and Irish Railway Stocks and Shares

Stocks	Highest 1946	Lowest 1946	Prices	
			Jan. 7, 1947	Rise Fall
G.W.R.				
Cons. Ord. ....	61½	54½	58	—
5% Con. Pref. ....	126½	107	123½	— 1
5% Red. Pref. (1950) ...	106½	102½	104½	—
5% Rt. Charge ....	140½	122½	135½xd	—
5% Con sGuar. ....	137½	118½	134½	—
4% Deb. ....	129½	106	125½xd	—
4½% Deb. ....	129½	107	125½xd	—
4½% Deb. ....	130½	114	125½xd	—
5% Deb. ....	142½	125	137½xd	—
2½% Deb. ....	95½	81½	92½xd	—
L.M.S.R.				
Ord. ....	30½	26½	30½	—
4% Pref. (1923) ....	64	52½	62½	—
4% Pref. ....	86	75½	83½	—
5% Red. Pref. (1955) ...	105½	97	102½	+ 2
4% Guar. ....	108½	100	105½	—
4% Deb. ....	120	103	115	—
5% Red. Deb. (1952) ...	108½	105½	105½	—
L.N.E.R.				
5% Pref. Ord. ....	7	5	6½	—
Def. Ord. ....	3½	2½	3½	—
4% First Pref. ....	59½	50½	57½	—
4% Second Pref. ....	29½	25½	29½	—
5% Red. Pref. (1955) ...	104	97	102½	+ 2
4% First Guar. ....	107	98	104½	—
4% Second Guar. ....	101	90	98½	—
4% Deb. ....	104	87½	100	—
4½% Deb. ....	119½	102½	114½	— 1
5% Red. Deb. (1947) ...	101	99	99½	—
4½% Sinking Fund Red. Deb. ....	107½	101½	102½	—
SOUTHERN				
Pref. Ord. ....	79½	70	76½	—
Def. Ord. ....	24	19½	24	—
5% Pref. ....	125½	107	122½	— 1
5% Red. Pref. (1964) ...	115½	106½	112½	—
5% Guar. Pref. ....	137½	119	134½	—
5% Red. Guar. Pref. (1957) ....	115½	107½	112½	—
4% Deb. ....	129½	105½	125½	—
5% Deb. ....	159½	125½	136½	—
4% Red. Deb. (1962- 67) ....	113½	104½	109½	—
4% Red. Deb. (1970- 80) ....	115½	104½	111½	—
FORTH BRIDGE				
4% Deb. ....	109	103	104½	—
4% Guar. ....	105	102	101	—
L.P.T.B.				
4½% "A" ....	133½	120½	129½	—
5% "A" ....	142½	130½	138½	—
3% Guar. (1967-72) ...	108	98½	105½	—
5% "B" ....	128½	117½	124½	—
5% "C" ....	64½	56½	65½	—
MERSEY				
Ord. ....	34	30	34	—
3% Perp. Pref. ....	76	69	73½	—
4% Perp. Deb. ....	117½	103	112	—
3% Perp. Deb. ....	98	81	93½	—
IRELAND*				
BELFAST & C.D.				
Ord. ....	8½	6	7½	—
G. NORTHERN				
Ord. ....	41½	31½	39	—
Pref. ....	63½	52	62½	+ ½
Guar. ....	97½	78½	97	—
Deb. ....	107	97½	105½	— 1½
IRISH TRANSPORT				
Common ....	19½	16½	18½	— 1½
3% Deb. ....	107	100	105½	—

\* Latest available quotation

## His Majesty's Colonial Service

## THE COLONIAL ENGINEERING SERVICE

A VACANCY exists for a Works Superintendent on the Palestine Railways.

Qualifications entitling candidates to consideration are corporate Membership of the Institution of Mechanical Engineers, or degrees or diplomas exempting them from the examinations of that Institution.

Applicants must have served a regular apprenticeship in a British railway workshop or locomotive building establishment followed by not less than two years in a locomotive drawing office. They should have held also a post equivalent to Assistant Works Manager or Superintendent in a British railway workshop or locomotive building establishment for not less than 3 years.

They must be conversant with production methods in the various sections of a locomotive repair workshop or locomotive building establishment. In addition some experience of carriage and wagon repairs covering wood and steel stock is essential.

Qualities of tact, patience, persistence and ability to control staff, including British Staff, in a workshop staffed by more than 1,000 employees are also most important.

The selected officer will be required to take full responsibility under the direction of the Chief Mechanical Engineer for the organisation and operation of the main locomotive and carriage and wagon workshops of the Palestine Railways.

Candidates must be between 35 and 40 years of age. The appointment will be on probation for permanent and pensionable employment. Salary in the scale £600 per annum rising by annual increments of £25 to £1,000 (£1 = £1), subject to passage of efficiency bar at £800, plus expatriation allowance of £150 per annum. Starting salary will depend on age, qualifications and experience.

Government quarters may be provided, in which case rent will be charged at the rate of 5 per cent. of basic salary. Otherwise a housing allowance is granted to married men on a scale in accordance with salary.

A temporary variable high cost of living allowance

is at present payable. Selected officer will be required to contribute to the Widows' and Orphans' Pension Fund at rate of 5 per cent. of basic salary plus expatriation allowance.

Applications should be addressed to the Director of Recruitment, Colonial Office, 15, Victoria Street, London, S.W.1, stating age, qualifications and experience.

## Crown Agents for the Colonies

APPLICATIONS from qualified candidates are invited for the following post:—

CHIEF STAFF OFFICER required by the Government of Palestine for the Railway Department for two tours of 18 to 24 months, with prospect of permanency. Salary £1,100 a year plus expatriation allowance of £200 a year and cost-of-living allowance of £15,850 a month for a single man and between £17,854 and £22,278 for a married man, according to number of children. (£1 = 1,000 mils = £1). Free passages. Candidates, aged 40 to 45, must have a high standard of education and have had wide experience in staff administration. Experience on a British Railway and/or in the handling of other than British staff would be an advantage. Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, and mentioning this paper, to the CROWN AGENTS FOR THE COLONIES, 4, Millbank, London, S.W.1, quoting M/N/17168 on both letter and envelope.

STATION DESIGN. A striking example of modern British practice at the important wayside station of Luton. Reprinted from *The Railway Gazette*, July 7, 1944. Price 1s. Post free 1s. 2d.

THE "PAGET" LOCOMOTIVE. Hitherto unpublished details of Sir Cecil Paget's heroic experiment. Eight single-acting cylinders with rotary valves. An application of the principles of the Williams central-valve engine to the steam locomotive. By James Clayton, M.B.E., M.I.Mech.E. Reprinted from *The Railway Gazette*, November 2, 1945. Price 2s. Post free 2s. 3d.

## London &amp; North Eastern Railway

APPLICATIONS are invited for the position of Permanent Way Assistant to Engineer (London). Applicants should not be more than 50 years of age, must be a Member, or Associate Member, of the Institution of Civil Engineers, and have expert knowledge of matters concerning railway permanent way, maintenance, and design, including point and crossing work. Practical experience of inspection of permanent way for renewal essential. The successful applicant will be required to work in London, contribute to the L.N.E.R. Superannuation Fund, and to pass a medical and eyesight examination. Maximum salary £1,200 per annum, plus current War Advance, which at present is £72 16s. per annum. Commencing salary will depend on qualifications and experience. Applications with copies of two recent testimonials and/or the names of two referees should be forwarded to the Engineer (London), Kings Cross Station, London, N.1, by not later than January 25, 1947.

THE RAILWAY SYSTEM OF JAMAICA. A general description of the system and its traffic, with an account of economic problems; the motive power used; and some features of operation. By H. R. Fox, B.Sc., M.Inst.C.E., General Manager, Jamaica Government Railway. Reprinted from *The Railway Gazette*, January 5 and 12, 1945. Price 1s. Post free 1s. 2d.

SECTIONED PERSPECTIVE VIEW OF LOCOMOTIVE FRONT END. A notable drawing of L.M.S.R. class "7P" 4-6-2 locomotive of the latest type. Reprinted from *The Railway Gazette*, June 15, 1945. Price 2s. 6d. Post free 2s. 8d.

BRITISH WORK ON PERSIAN RAILWAYS. The achievements and difficulties of the R.E.S. during the 15 months in which they laid the foundation for effective aid to Russia. Reprinted from *The Railway Gazette*, February 2 and 16, 1945. Price 1s. Post free 1s. 2d.

tinued or restricted for the period January 6 to March 7. In general, the suspensions affect only internal services, the international trains being maintained. Various internal long-distance services operate only on certain days, the day expresses between Paris and Basle running three times a week instead of daily; the "Arlberg Express" on the same line, however, remains unaffected. On the other hand, the high-speed railcar from Paris to Strasbourg and back has been discontinued.

**Suspension of Swedish Electrification.**—Railway electrification in Sweden is to be discontinued indefinitely as from July 1 this year, according to a recent statement by Herr Nilsson, the Swedish Minister of Communications. This will mean the shelving of the conversion programme, which envisaged the electrification of some 773 route-miles within the coming decade. The measure has been necessitated by shortage of labour and materials, and aims also at limiting investments as a precaution against inflation.

**Nyasaland Railways Limited.**—Gross receipts from working the railway, including the lake steamer service, in 1945 were £246,615, as against £217,709. Working expenses increased from £130,595 to £152,039, but net receipts were higher at £94,576. After adding dividends, interest, and the balance from 1944, the total available for distribution was £144,437. Payment of interest on the 5 per cent. "A" debenture stock, "B" income debenture stock, and bridge debenture stock, redemption of the 5 per cent. "A" debenture stock, and provision of a reserve for taxation, will take £143,574, leaving a balance of £863 to be carried forward. The total tonnage carried by the railway increased from 93,004 tons to 113,206 tons, and the number of railway passen-

gers rose from 283,832 to 320,704. Working expenses, which include provision for renewals, amounted to 61.65 per cent. of the gross receipts as against 55.98 per cent. in 1944. Excluding renewals, comparative percentages were 48.90 in 1945 and 47.95 in 1944.

**Inquiry into Byfleet Derailment, Southern Railway.**—Colonel A. H. C. Trench conducted an inquiry in London, on January 6, into the derailment near Byfleet, on December 27, of the 2.20 p.m. Bournemouth to Waterloo express (reported in our January 3 issue). The driver of the train said that on finding the Byfleet distant signal against him, he reduced speed to 60 m.p.h., and when the signal came off he released the brake, but did not intend to increase his speed. He did not feel a roll or shake until the engine suddenly seemed to go down at the back. Evidence was given by a permanent way inspector that the level and gauge of the track at Byfleet, before the accident, were in good condition except for a loose sleeper on the up through line, and he had instructed a ganger to put it right. A foreman fitter said that nothing had been found on the damaged engine to account for the derailment. In concluding the inquiry, Colonel Trench said that his report would be published in due course.

**Lantern Lectures on Railway Subjects.**—A series of three lantern lectures on "Railways—How they are built and how they are run," given for boys at the Institution of Civil Engineers, between December 30 and January 7, to which reference was made in our December 13 issue, proved extremely popular. Between 450 and 500 boys attended each lecture. The demand for tickets was such that it was necessary for each lecture to be repeated on a second day. The first lecture, "One hundred miles per hour by train," was given by Mr. Cecil J. Allen, M.Inst.T.; the second,

"How the railway is built," dealing with permanent way, tunnels and bridges, was given by Mr. L. G. B. Rock, A.M.I.C.E., and the third, "How trains are run," dealing with traffic working, signals, and train control, by Mr. O. S. Nock, A.M.I.C.E.

## Forthcoming Meetings

January 10 (Fri.).—The Institution of Mechanical Engineers, Storey's Gate, St. James's Park, London, S.W.1. 5.30 p.m. "The Development of an Axial Flow Gas Turbine for Jet Propulsion," by Mr. D. M. Smith, D.Sc., M.I.Mech.E., and "Practical Aspects of Cascade Wind Tunnel Research," by Mr. K. Watson Todd, M.Eng., A.M.I.Mech.E.

January 13 (Mon.).—The Institute of Transport, at the Institution of Electrical Engineers, Savoy Place, Victoria Embankment, W.C.2. 5.30 p.m. "The Transshipment of Goods Train Traffic," by Mr. David Blee, M.Inst.T.

January 14 (Tue.).—The Institution of Civil Engineers (South Wales & Monmouthshire Association), at the South Wales Institute of Engineers, Park Place, Cardiff, 6 p.m. "Demolitions in N.W. Europe," by Lt.-Colonel A. Borlase, R.E.(T.), A.M.I.C.E.

January 15 (Wed.).—The Permanent Way Institution (London Section), at the Oak Room, Kingsway Hall, Kingsway, London, W.C.2. 6.30 p.m. "Trackwork on the Reichsbahn," by Mr. H. C. Orchard, A.M.Inst.C.E.

January 15 (Wed.).—The Institute of Welding (North London Branch), in the Fyvie Hall, Polytechnic, Regent Street, W.1. 7.30 p.m. "The Application of Welding to Steel Structures," by Mr. R. G. Braithwaite, M.Inst.C.E.

## Railway Stock Market

Further news of the serious fuel situation had a restraining effect on stock markets, with industrial shares easing after their recent gains, although only moderate profit-taking developed. British Funds displayed firmness, prices tending higher because of the closing of the "tap" issue of 2½ per cent. Treasury bonds and the stimulus to reinvestment demand expected from the big January interest disbursements and the cash repayments in respect of Local Loans. Imperial Chemical lost part of an earlier rise, and shares connected with the building, electrical equipment, motor, and textile industries showed moderate reactions on the latest fuel news.

Firmness was maintained in colliery securities on break-up value estimates, and iron and steels were helped by the industry's big expansion and development programme, which it is estimated will cost £168 millions. United Steel were firm on the terms of the large preference share issue, Vickers rose further, Whitehead Iron continued in demand, and Colvilles strengthened. Oil shares reacted, apart from Anglo-Iranian, which responded further to the latest Middle-East developments. Cable & Wireless stock regained part of an earlier decline, and electric supply shares were steady awaiting the compensation terms.

Home rails turned easier, despite the further strengthening of British Funds with which they have tended to move in recent weeks. Although it is recognised that prior charge stocks are in many cases undervalued at current levels, which are below the "take-over" prices, buyers are showing an attitude of caution, partly because there is a tendency to await further

Parliamentary discussion of the Transport Bill for clarification of some of the compensation clauses. Moreover, according to many views, because of the Transport Bill provisions, the forthcoming dividends in respect of ordinary or equity stocks are likely to be fractionally below those paid for 1945, when income was supplemented by moderate withdrawals from reserves.

Sentiment has been affected to some extent by suggestions that there is a possibility of the Transport stock to be allocated to railway stockholders being issued at a small premium. This fear has been aroused by the fact that the new 2½ per cent. Treasury stock in connection with the replacement of the Coal Commission stock is to be issued at 100½. If Transport stock were issued at a small premium, railway stockholders would receive less Transport stock on the basis of the fixed take-over prices than if Transport stock were issued at par.

Although this has made for caution in the home railway market, it is generally assumed that Transport stock in fact will be issued at par. Nevertheless, the whole question of railway compensation has been handled in such a manner as to create uncertainty, giving the impression that to some extent the rights of stockholders have been sacrificed so as not to impede the progress of Mr. Dalton's cheaper money policy. So far in fact the rate of interest on Transport stock has not been officially announced, but it is generally assumed that this will be 2½ per cent.

Movements on balance were small, and later buyers were attracted by the view that, when uncertainties regarding compensation have been finally cleared up, prior-charge and senior preference stocks

are likely to reach the take-over prices. Great Western and Southern 4 per cent. debentures both eased to 125½ (take over prices are 128½) and London Transport 4½ per cent. "A" eased to 129½, and there were also fractional declines in L.N.E.R. first preference and L.M.S.R. senior preference. The forthcoming dividends helped to maintain steadiness in ordinary stocks, although Southern deferred receded to 24. Both L.M.S.R. ordinary and L.N.E.R. second preference remained above the take-over levels.

The outcome of the negotiations at Buenos Aires continues to be awaited in the Argentine railway market, and hopeful views predominate; a fair amount of speculative demand is in evidence for preference and ordinary stocks. Compared with a week ago, Buenos Ayres Great Southern ordinary has moved up from 12½ to 13, the 5 per cent. preference gained 2½ points at 44, and the 4 per cent. debentures show a rise from 83½ to 86½. Buenos Ayres Western has also improved from 14½ to 16½, and the 4 per cent. debentures from 80 to 83, while Central Argentine issues reflected the better trend, the ordinary stock strengthening to 9½, and the 4 per cent. debentures were 79½, compared with 75½ a week ago. Buenos Ayres & Pacific also moved in favour of holders, with the 5 per cent. preference 44 and the 4 per cent. debentures 86½. Demand was in evidence for Argentine North Eastern issues, the "C" debentures improving from 43½ to 45. Antofagasta preference at 56½ continued to reflect the arrears payment. San Paulo remained under the influence of additional compensation hopes and further strengthened to 139.

### Traffic Table and Stock Prices of Overseas and Foreign Railways

	Railways	Miles open	Week ended	Traffic for week		No. of Week	Aggregate traffic to date			Shares or Stock	Prices		
				Total this year	Inc. or dec. compared with 1944/5		Totals		Increase or decrease		Highest 1945	Lowest 1945	January 7, 1947
							1946/7	1945/6					
South & Central America	Antofagasta ... ..	834	29.12.46	£ 35,840	— £ 5,730	52	£ 1,783,210	£ 1,572,290	+ £ 210,920	Ord. Stk.	12	8½	10
	Arg. N.E. ... ..	753	28.12.46	ps.286,800	— ps. 2,200	26	ps.8,209,000	ps.7,841,500	+ ps. 367,500	"	10	5½	17
	Bolivar ... ..	174	Dec., 1946	4,279	— 863	52	51,910	58,425	— 6,515	6 p.c. Deb.	8½	5½	6½
	Brazil ... ..	—	—	—	—	—	—	—	—	Bonds	25	17	26
	B.A. Pacific ... ..	2,771	28.12.46	ps.1,929,000	— ps.623,000	26	ps.58,194,000	ps.55,143,000	+ ps.3,051,000	Ord. Stk.	7	5	7½
	B.A.G.S. ... ..	5,080	28.12.46	ps.3,927,000	+ ps.26,000	26	ps.87,010,000	ps.83,393,000	+ ps.3,617,000	Ord. Stk.	13½	10½	13
	B.A. Western ... ..	1,924	28.12.46	ps.1,563,000	+ ps.351,000	26	ps.32,271,000	ps.30,541,000	+ ps.1,730,000	"	12½	9½	16
	Cent. Argentine ... ..	3,700	28.12.46	ps.3,250,900	+ ps. 56,350	26	ps.81,840,397	ps.79,130,950	+ ps.2,709,447	"	9½	7	9½
	Do. ... ..	—	—	—	—	—	—	—	—	Dfd.	5	2½	5
	Cent. Uruguay ... ..	970	28.12.46	36,314	— 12,279	26	949,218	978,956	— 29,738	Ord. Stk.	7½	4	9
	Costa Rica ... ..	262	Aug., 1946	36,220	+ 4,160	9	73,313	63,153	+ 10,160	"	16½	13	9
	Dorada ... ..	70	Nov., 1946	27,600	— 1,354	48	337,575	330,489	+ 7,086	1 Mt. Deb.	103	102	100½
	Entre Rios ... ..	808	28.12.46	ps.416,900	— ps.3,400	26	ps.11,105,600	ps.10,936,600	+ ps.170,000	Ord. Stk.	7½	4½	6½
	G.W. of Brazil ... ..	1,030	28.12.46	37,900	+ 2,400	52	1,585,200	1,364,300	+ 220,900	Ord. Stk.	30-	23½	20-
	Inter. Ctl. Amer. ... ..	794	Nov., 1946	\$833,362	+ \$197,150	48	\$9,543,915	\$8,130,214	+ \$1,413,701	"	—	—	—
	La Guaira ... ..	22½	Dec., 1946	4,705	— 650	52	67,508	74,152	— 6,644	5 p.c. Deb.	78	70	65
	Leopoldina ... ..	1,918	28.12.46	74,876	+ 18,522	52	3,218,549	2,814,610	+ 403,939	Ord. Stk.	4½	3½	3½
	Mexican ... ..	483	31.5.46	ps.1,464,000	+ ps.459,100	22	ps.7,706,200	ps.13,441,600	+ ps.5,220,200	Ord. Stk.	—	—	—
	Midland Uruguay ... ..	319	Nov., 1946	14,510	— 5,278	22	94,676	94,801	— 125	"	—	—	—
	Nitrate ... ..	382	31.12.46	10,958	+ 505	52	212,575	191,819	+ 20,756	Ord. Sh.	75½	67½	73½
N.W. of Uruguay ... ..	113	Nov., 1946	5,098	— 662	22	27,692	29,151	— 1,459	"	—	—	—	
Paraguay Cent. ... ..	274	27.12.46	£70,966	+ £17,556	26	£1,633,990	£1,589,621	+ £44,369	Pr.Li.Stk.	79½	77	50	
Peru Corp. ... ..	1,059	Dec., 1946	147,153	+ 1,946	26	920,202	849,478	+ 70,724	Pref.	10½	7½	8½	
Salvador ... ..	100	Aug., 1946	cl08,000	+ cl4,000	9	cl90,000	cl89,000	+ cl,000	"	—	—	—	
San Paulo ... ..	153½	Nov., 1946	5,575	+ 2,945	22	25,730	12,320	+ 13,410	Ord. Stk.	60½	50½	138½	
Talcal ... ..	1301	29.12.46	49,277	— 2,385	26	1,278,673	1,208,171	+ 70,502	Ord. Sh.	17-	10½	20½	
Uruguay Northern ... ..	73	Nov., 1946	1,386	— 331	22	6,596	9,065	— 2,469	Ord. Stk.	3	1	—	
Canada	Canadian National ... ..	23,482	Nov., 1946	9,282,000	+ 705,500	48	91,193,750	99,564,250	— 8,370,500	"	—	—	—
	Canadian Pacific ... ..	17,037	31.12.46	1,906,000	— 3,250	52	73,123,750	79,027,250	— 5,903,500	Ord. Stk.	24	14½	18
Various	Barsi Light† ... ..	202	Oct., 1946	17,887	— 2,415	30	162,315	151,567	+ 10,748	Ord. Stk.	131	123	112½
	Beira ... ..	204	Sept., 1946	90,848	+ 17,136	52	950,694	920,575	+ 30,119	"	—	—	—
	Egyptian Delta ... ..	607	20.11.46	22,364	+ 1,598	33	419,149	395,701	+ 23,448	Pr. Sh.	10	8½	6
	Manila ... ..	—	—	—	—	—	—	—	—	B. Deb.	71	55½	68½
	Mid. of W. Australia ... ..	277	Oct., 1946	20,833	+ 1,284	17	69,457	64,837	+ 4,620	Inc. Deb.	97½	85	70
	Nigeria ... ..	1,900	Oct., 1946	328,866	+ 30,729	30	2,594,380	1,607,174	+ 987,206	"	—	—	—
	Rhodesia ... ..	2,445	Sept., 1946	541,147	+ 24,052	52	6,174,663	6,069,663	+ 105,000	"	—	—	—
	South African ... ..	13,323	30.11.46	1,251,934	+ 159,203	34	39,933,637	35,322,923	+ 4,610,714	"	—	—	—
	Victoria ... ..	4,774	June, 1946	1,196,661	— 23,996	—	—	—	—	"	—	—	—

† Receipts are calculated at 1s. 6d. to the rupee